THREE-D GEOCONSULTANTS LIMITED

Open File Report 90-11

# A BUILDING AND DECORATIVE STONE INVENTORY OF SELECTED MAP AREAS IN NEW BRUNSWICK

by

Three-D GeoConsultants Limited

Canada-New Brunswick Mineral Development Agreement

Entente Canada-Nouveau-Brunswick L'Exploitation Minérale

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Minister of Natural Resources and Energy

Hon. Edmond P. Blanchard
Minister of State for Mines

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# A BUILDING AND DECORATIVE STONE INVENTORY OF SELECTED MAP AREAS IN NEW BRUNSWICK

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Copies available by contacting:

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28 March 1990 Our File: 8842

Mr. T.C. Webb
Department of Natural Resources and Energy
Minerals and Energy Branch
P.O. Box 6000
Fredericton, N.B.
E3B 5H1

Dear Sir:

RE: A Building and Decorative Stone Inventory of Selected Map Areas in New Brunswick

We are pleased to submit our final report for the above project.

We believe the report, and the work which has been completed, has achieved the objectives of the project. The comments which you provided on the draft version have been incorporated into the final report.

We have enjoyed the nature of the work involved in this contract. We believe that several of the sites evaluated have potential and suggest that further evaluation by industry be encouraged.

Please contact us if any questions arise.

Sincerely,
THREE-D GEOCONSULTANTS LIMITED

D. Ball

F.D. Ball
President

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# 1.0 INTRODUCTION

The production of stone for building and dimension stone purposes has had a long history in the Province of New Brunswick. In recent years, production has been limited to a few locations, but many former producing quarries have been the subject of renewed interest. This interest reflects the strong resurgence in demand for stone products that began during the 1980's. These stone products are used for a wide variety of purposes including stone panelling (also called thin-wall stone veneer or cladding), monumental stone, curbing, crushed decorative stone, facing stone (ashlar), and similar applications. Several terms are used in a general sense to describe these products including architectural stone, ornamental stone, dimension stone (i.e., a stone shaped to certain dimensions), building stone and similar nomenclature.

Many of the quarries that have previously been used for stone production could be readily reactivated, but there is also a good potential for development of new quarry sites in the Province. The main quarrying locations in the past tended to be in close proximity to population centres or to water-borne transportation routes. Thus, it is probable that many areas of the Province were never evaluated for their stone potential. The present study has been designed to assess this potential and examine the possibilities for development of new stone quarries.

## 1.1 OBJECTIVE AND SCOPE

The objective of the study was to identify stone deposits that have the potential to be developed. The colour, texture and aesthetic appeal of the stone was assessed relative to

colour, texture and aesthetic appeal of the stone was assessed relative to the commercial desirability of the stone. These characteristics were assessed in an unfinished state and selected samples were 'finished' to provide additional data. Several basic criteria relative to the potential for quarrying were also evaluated. These factors included: joint pattern (geometry) or bed thickness (i.e., maximum block size), structural integrity (planes of weakness such as organic debris, shearing, etc.), homogeneity of colour and texture (free of imperfections, 'knots', veins, sulphide minerals, etc.), suitable topographic relief to facilitate quarry development, and proximity to an access road.

The study was of a regional reconnaissance nature with the emphasis on selected map areas as shown in Figure 1. Much of the study area is underlain by crystalline igneous rocks of felsic to mafic composition. Industry practice is to term all coarse-grained types of these rocks as 'granite' and use a colour description (pink granite, black granite, etc.). This practice was followed in the course of this study but proper geological terminology has been provided as applicable and references to detailed petrographic studies have been given where available. Several areas of red sandstone, present in both northern and southern New Brunswick, were of interest because many known quarry sources in southeastern New Brunswick are no longer operational.

A high percentage of sites in study area was on Crown Land but in some areas of in southeastern New Brunswick,there was a high percentage of sites on freehold land. The sites evaluated were to be 'new' sites that had not been previously developed or quarried.

The study included a comprehensive review of available geological data for the areas of interest. Field evaluation

was carried out to assess the potential of selected rock units. The characteristics of each rock unit and the potential for quarrying was examined according to criteria established in consultation with local quarry operators and stone fabricators. Representative samples were collected and finished (i.e., honed and polished). Slabs were prepared for those sites considered to have the highest potential for development. The report that follows provides a detailed account of the various facets of the study.

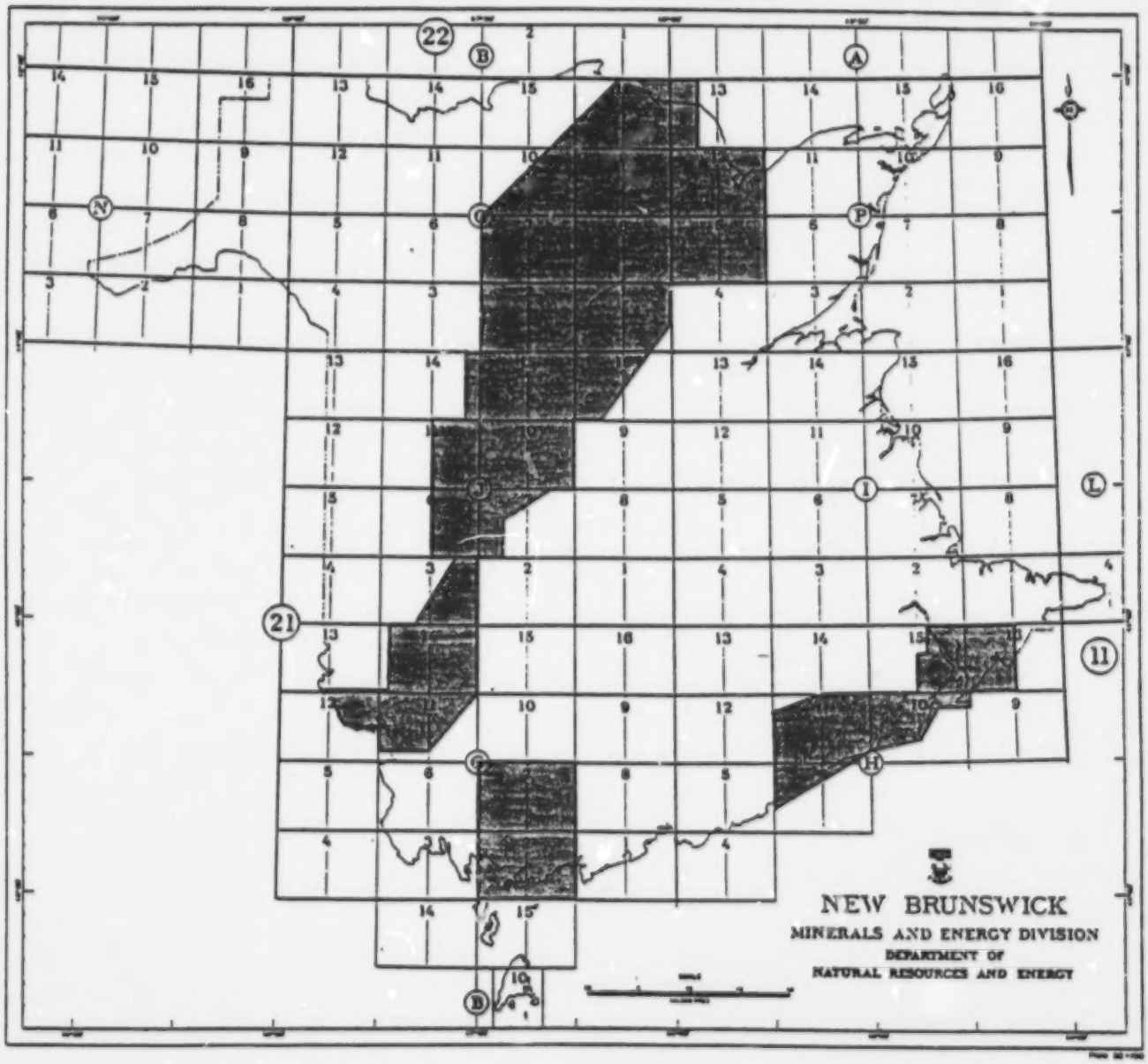


Figure 1 Outline of study areas

# 2.0 METHODOLOGY

## 2.1 LITERATURE REVIEW

The first phase of the study was an extensive review of geological data relevant to the study area. Geological maps and reports were examined relative to the objectives of the study. Bedrock mapping and reports as published by the New Brunswick Department of Natural Resources and Energy (Mineral and Energy Division) were a major source of information. Similar documents available from the Geological Survey of Canada were also of considerable value, particularly recent work by J.B. Whalen.

In addition to the literature review, discussions were held with individuals familiar with numerous bedrock mapping projects in the study area. Rock samples, particularly polished specimens from these projects, were examined where available.

The literature study identified a total of fifty-nine rock units that warranted evaluation. The locations and a listing of these units are presented on Plate 90-11 (back pocket) and Appendix 1, respectively.

## 2.2 SELECTION OF ROCK UNITS FOR FIELD EVALUATION

The selection of rock units that warranted further evaluation was based on several factors. The literature review provided considerable background data on the characteristics of each unit. This information was used to evaluate the physical and aesthetic properties of the stone relative to a number of technical criteria. In addition, the Terms of Reference for the study provided a number of operational guidelines relative to land ownership, access, and similar parameters

which were also taken into consideration in the selection process.

The subsections which follow provide a discussion of the criteria used in the selection process. Appendix 1 provides a listing of each of the fifty-nine units shown on Plate 90-11 (back pocket). Brief comments are presented in the appendix as to the reasons for exclusion or inclusion of individual rock units in the field evaluation program.

### 2.2.1 Criteria Used to Assess Stone Characteristics

A number of parameters were considered in the assessment of the physical and aesthetic characteristics of each rock unit. These parameters involve technical factors such as fracture patterns and block size, and market factors such as colour, texture and overall appeal. The principal criteria used to assess the properties of each rock unit are discussed on an individual basis below. These criteria were initially applied in the selection process, but in many cases the same criteria were addressed from a different perspective in the field evaluation phase. Table 1 presents a summary of the criteria used.

**Table 1 Summary of Assessment Criteria**

| Parameter | Comments |
|---|---|
| Colour: | Black, green, yellow, and brown colours were considered to have higher market potential. Uniformity of colour was important in the assessment of quarry potential. |
| Texture: | Initial division was into fine, medium or coarse grained. Consistent texture was considered a desirable feature. Variation in texture (such as phenocrysts, porphyry) was acceptable if the variation was reasonably consistent. |
| Imperfections: | Generally considered undesirable. Rated as follows:<br>sparse - one per 2 to 3 square metres<br>moderate - one or more per 1 to 2 square metres<br>intense - several per square metre |
| Block size and Jointing: | The joint pattern generally controls maximum block size. Joints were considered to be regular (uniform) or irregular. Spacing was classified as follows:<br>wide - greater than 1.5 m<br>moderate - 0.5 to 1.5 m<br>intense - less than 0.5 m |
| Mineralogy: | The presence of sulphide minerals, large percentages of micas, or other deleterious components were noted. |

Colour: The marketability of a particular stone is to a large degree a function of its aesthetic appeal. Colour is an important factor in the evaluation of market potential. To some extent, the more rare a colour, the greater its market significance. Colours such as black, green, yellow, and brown are of greater interest than more readily available stone colours such as pink or grey. In the selection of rock units for field evaluation, priority was given to units that had colours with high market appeal.

In the assessment of individual units in the field, colour was assessed from a slightly different perspective. The uniformity of the colour over the extent of the area investigated was assessed. A uniform colour over a large area is desirable to enable production of a reasonably consistent product colour over the life of the quarry. Variation in colour due to changes in the mineralogical composition (e.g., percentage of quartz, feldspar, etc.) was a factor in this assessment. However, it should be noted that certain types of colour variation can increase the market potential of a stone. For example, colour banding (often termed 'variegated' stone in the industry) such as is associated with gneisses can be a positive factor. Thus, colour was assessed primarily in the context of market appeal with secondary importance placed on the consistency or uniformity found in the field.

Texture: The initial assessment of texture typically classified a rock unit as a fine-, medium-, or coarse-grained rock. In general, a fine-grained rock was considered to have slightly better market appeal than coarser textures but this was not given strong emphasis. A consistent, homogenous texture was regarded as desirable. As with colour, variation in crystal sizes, e.g., phenocrysts, can increase market

appeal and allowances for such features were made in the assessment.

Imperfections: Small veins, dykes, clusters of crystals, xenoliths, (i.e., inclusions of other rock types; termed 'knots' by the stone industry) and other imperfections can detract from the stone quality and increase waste-to-product ratios. The abundance or frequency of imperfections were rated as none, sparse (one imperfection every 2 to 3 $m^2$), moderate (one or more imperfections every 1 to 2 $m^2$), or intense (numerous imperfections within a 1 $m^2$ area).

Block Size and Jointing: Joints, natural fractures that occur within a rock, are of particular significance in determining the maximum size of the quarry block. The more closely spaced these features, the smaller the block size that can be obtained. In addition, the spatial orientation of the joints relative to each other, the regularity of the spacing interval and similar factors have a significant impact on the overall viability of the quarry operation. Widely spaced joints occurring in regular planes that intersect at right angles are preferred.

In the field evaluation, joint patterns were determined to be either regular or irregular. Regular jointing was considered to be recurring joint planes of relatively uniform strike and dip. An irregular pattern was considered to be randomly oriented joints, often with curved or discontinuous joint planes.

Joint spacing was based on the average distance between joint planes with the same orientation. Joint spacings were divided into three classifications: Intense spacing was less than 0.5 m; moderate spacing was between 0.5 and 1.5 m, and wide spacing was greater than 1.5 m (after Lebaron et al. 1989).

Mineralogy: The mineral composition of a stone has an impact on its structural integrity and durability. Certain minerals such as mica readily weather and cause deterioration of the stone if present in large quantities. In addition, certain minerals can separate during the finishing process and result in small pits in the finished surface. Sulphide minerals commonly oxidize resulting in iron staining on finished stone products. In sedimentary rocks, fossils, clay balls, organic debris, and poorly cemented areas (bullet holes), can interfere with the structural integrity or aesthetic value of the stone.

### 2.2.2 Logistical Criteria Used to Select Rock Units

The preceding section outlined several technical criteria that were assessed in the initial selection of rock units for field evaluation. In addition, there were several 'logistical' factors that were involved in the selection process. The Terms of Reference for the study provide guidelines for several parameters as discussed below.

Ownership and Mineral Rights: In the Province of New Brunswick, building and dimension stone fall under the jurisdiction of the Quarriable Substances Act rather than the Mining Act. As such, stone resources are not a 'stakeable' mineral commodity and resource ownership is vested with the landowner. On lands administered by the Crown, a quarry permit or lease agreement can be used to allow development. On private lands, a purchase or lease arrangement with the landowner would have to be arranged. Because of these considerations selection of units, or of sites within units, was weighted toward Crown Lands where possible.

Road Access: Road access was not given strong consideration in the selection of rock units. However, it did have a

significant bearing on the determination of actual sites for field evaluation. A guideline of 1 to 2 km from a passable road or trail was used. In practise, the occurrence of 'known' outcrops of bedrock frequently coincided with road development associated with logging operations.

A few rock units met the basic selection criteria but were excluded for logistical reasons. They were situated primarily on freehold land but logging road networks appeared to provide reasonable road access. However, gated entries restricted access and the sites were not evaluated. The status of these sites was noted in Appendix 1.

Other logistical factors included such parameters as the limits of the study area (See Figure 1). Units which had a previous history of quarrying, or which were evaluated in an earlier study (Three-D Geoconsultants Limited, 1989, Miscellaneous Report No.7) were not included. A total of forty sites were to be included in the field study. These factors were outlined in the Terms of Reference for the study and are discussed as applicable in relation to individual rock units in Appendix 1.

## 2.3 FIELD INVESTIGATIONS

The literature review identified a total of seventy-nine individual rock units (fifty-nine major units and twenty sub-units). These are displayed on Plate 90-11 (back pocket) and listed in Appendix 1. The selection criteria discussed in the preceding section were then applied to these rock units and a priority list of forty units was established. Appendix 1 provides brief notes on the individual considerations for each rock unit.

The individual rock units selected for further evaluation were examined in greater detail. Pertinent geological maps and reports were assembled and the portions of the unit that appeared to have the greatest potential were identified. In general, several sites within each rock unit were earmarked for field evaluation. Since geological maps typically do not indicate the quality (e.g., size and extent) of bedrock outcrops, some sites were found to be of little value for the present study. Thus, field work frequently resulted in several sites within each unit being evaluated. In many cases, several outcrops were examined within close proximity to each other. In such cases, only a representative site was described. Separate 'Site Data Records' were completed for each site and are presented in Appendix 2.

Representative samples were collected from each rock unit. Selected samples were slabbed using a diamond saw and two samples were processed. One sample was honed to remove saw marks and the second was processed to a polished finish. These samples have dimensions of approximately 10 cm by 15 cm by 2.5 cm thick. Only honed samples were processed for sandstones. All samples have been submitted for long-term storage at the core storage facility of the New Brunswick Department of Natural Resources and Energy (Minerals and Energy Division) at Fredericton, N.B. and are available for viewing upon request.

## 3.0 RESULTS OF INVESTIGATIONS

Each of the selected units were evaluated in the field. For each unit, one or more Site Data Records were completed and have been compiled in Appendix 2. The descriptive summaries that follow provide the results of the evaluation of one or more sites in eachunit. Comments on thedevelopment potential of each unit have been providedbased on the literature review and site evaluations. A separate page of text has been allocated for each unit to facilitate the placement of appropriate sample site location maps.

### 3.1 ROCK UNIT DESCRIPTIONS

#### 3.1.1 Unit 3 Jacquet River Gabbro

| | | |
|---|---|---|
| COMMODITY: | Granite | COLOUR: Black |
| LOCATION: | Antinouri Lake, 21 km northwest of Bathurst. | |
| N.T.S.: | 21 ℄/16 and 21 P/13 | |
| ACCESS: | Highway 11 to LaPlante, secondary roads to Alcida and logging road west to Antinouri Lake area. | |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | This unit is a Devonian gabbroic stock (Dm) within the Elmtree Inlier. |
| PREVIOUS WORK: | Fyffe et al. 1981; Irrinki 1974; Fyffe 1974; Williams 1976; Burton 1987. |
| GEOLOGY: | This unit is a medium-grained ophitic to porphyritic gabbrocontaining phenocrysts and/or laths of plagioclase. |
| SITE SUMMARY: | Site 3-1 is located north of Antinouri Lake. The rocks are dark bluish grey to black in colour, with a porphyritic texture in a fine- to medium- grained matrix. The site displays intense |

jointing and/or fractures. The rock contains very finely disseminated sulphides.

**SAMPLES:** Hand sample 3-1

**DEVELOPMENT POTENTIAL:** The stone in this unit has a relatively good black colour. However, outcrops tend to display closely spaced jointing and/or fracturing. The rock also contains finely disseminated sulphides resulting in minor iron staining. There is little potential for quarry development near this unit based on the outcrop observed. There may be some potential near the central part of the pluton.

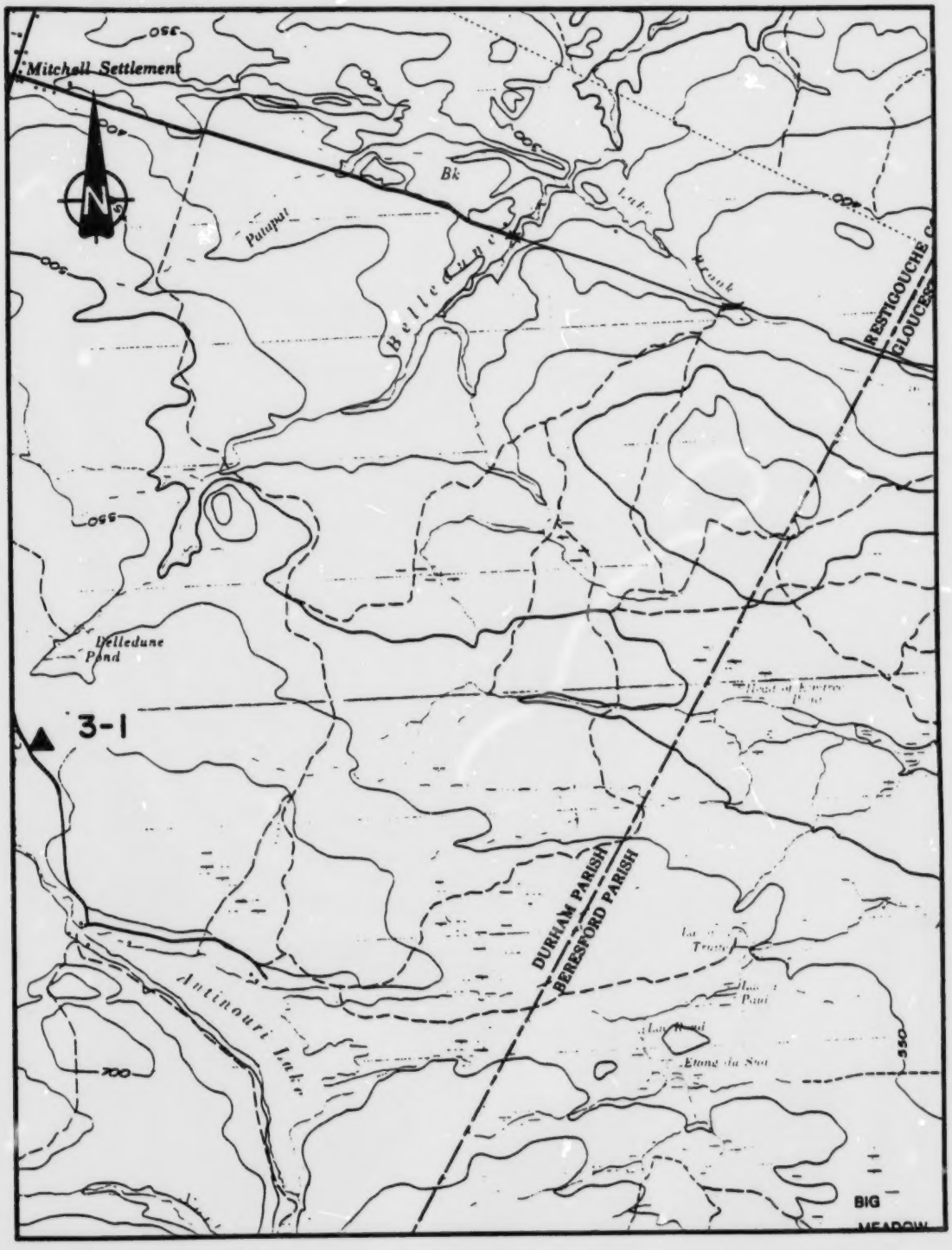


Figure 2 Site location map for Unit 3 (scale 1:50,000).

### 3.1.2 Unit 5 Nicholas Denys Granodiorite

| | |
|---|---|
| COMMODITY: | Granite COLOUR: Grey |
| LOCATION: | Nicholas Denys, 18 km northwest of Bathurst. |
| N.T.S.: | 21 P/12 |
| ACCESS: | Secondary roads, 11 km west of Highway 11 at Nigadoo. |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | This unit is a Devonian granodiorite stock ($Df_3$) that intrudes Silurian sedimentary rocks |
| PREVIOUS WORK: | Fyffe et al. 1981; Skinner 1974. |
| GEOLOGY: | The granodiorite is a light pinkish grey, medium-grained, massive, biotite-bearing rock, in part porphyritic, with grey feldspar phenocrysts. |
| SITE SUMMARY: | Site 5-1 is one of several outcrops located on the roadside just south of Nicholas Denys. The rock in this area is intensely jointed and/or fractured. It contains deeply weathered biotite and is iron stained. |
| SAMPLES: | Hand sample 5-1 |
| DEVELOPMENT POTENTIAL: | This unit has very limited outcrop due to a thick cover of glacial till. Observed outcrops had an unappealing colour and were intensely jointed and fractured indicating a low potential for dimension stone use. |

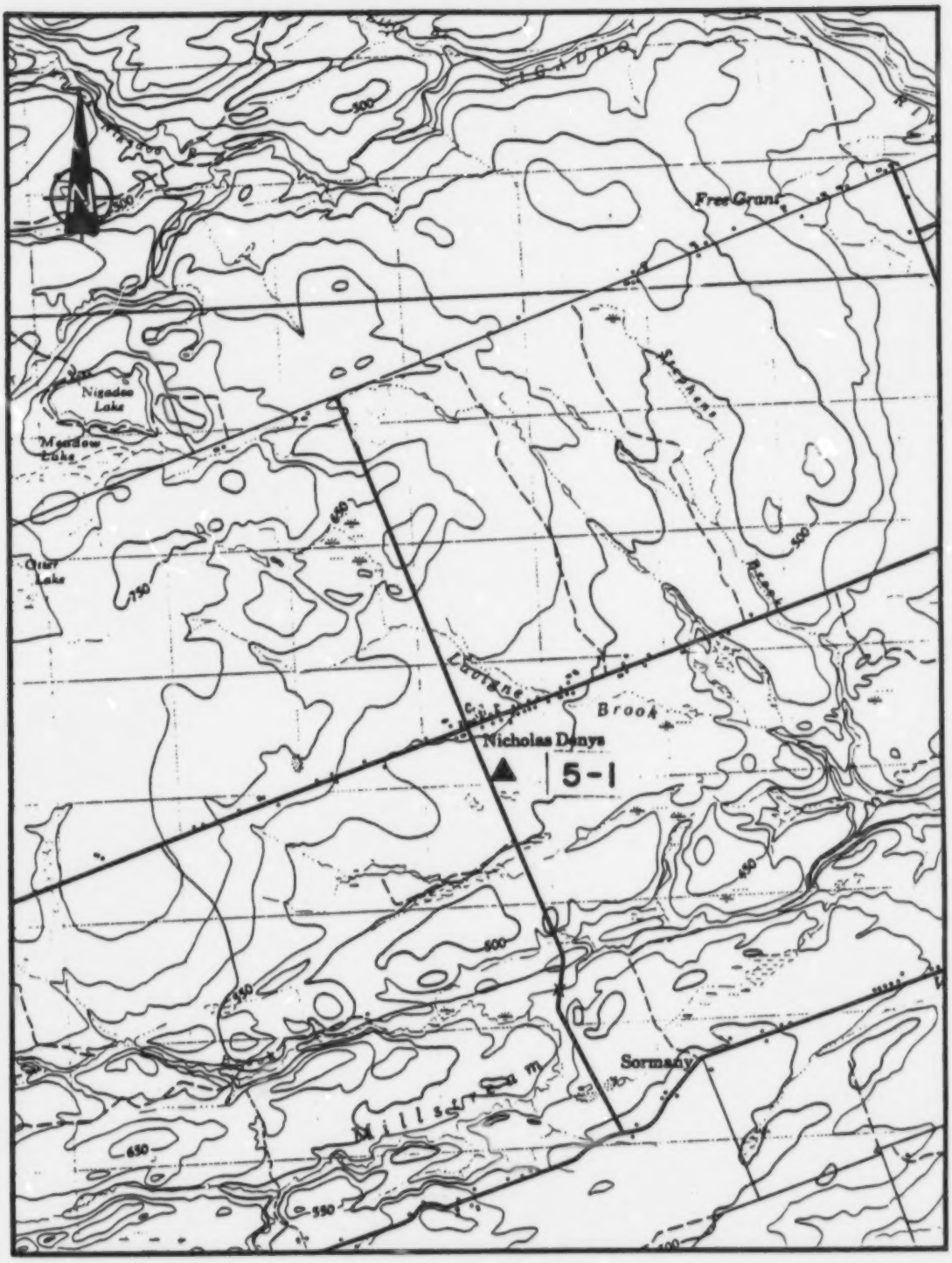


Figure 3 Site location map for Unit 5 (scale 1:50,000).

### 3.1.3 Unit 7 Ramsay Brook Gabbro

| | |
|---|---|
| COMMODITY: | Granite COLOUR: Black |
| LOCATION: | 2km east of Budworm City Airstrip, 75km west of Bathurst. |
| N.T.S.: | 21 O/10 |
| ACCESS: | This unit is situated just north of the intersection of Highway 180 and the Upsalquitch - Dalhousie NBIP haulage road. |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | This unit is a Devonian gabbro (Dm) located in the northwest portion of the Miramichi-Anticlinorium. |
| PREVIOUS WORK: | Fyffe et al. 1981; Fyffe 1973; Helmstaedt 1971. |
| GEOLOGY: | This unit is a "somewhat altered, biotite-rich gabbro" (Helmstaedt 1971). |
| SITE SUMMARY: | Site 7-1 is dark bluish to greenish grey medium-grained gabbro. Jointing is moderate and irregular, resulting in a potential block size of 1.5 X 0.5 X 0.5m. The rock contains minor disseminated sulphides and iron staining is present on many joint faces. |
| SAMPLES: | Polished and honed 7-1 |
| DEVELOPMENT POTENTIAL: | This unit has a good black colour. It is intensely jointed in most areas and, at best, has irregular jointing. The unit contains minor sulphides throughout and is highly stained locally. The unit may have a limited potential if a suitable area can be found without appreciable sulphide mineralization. |

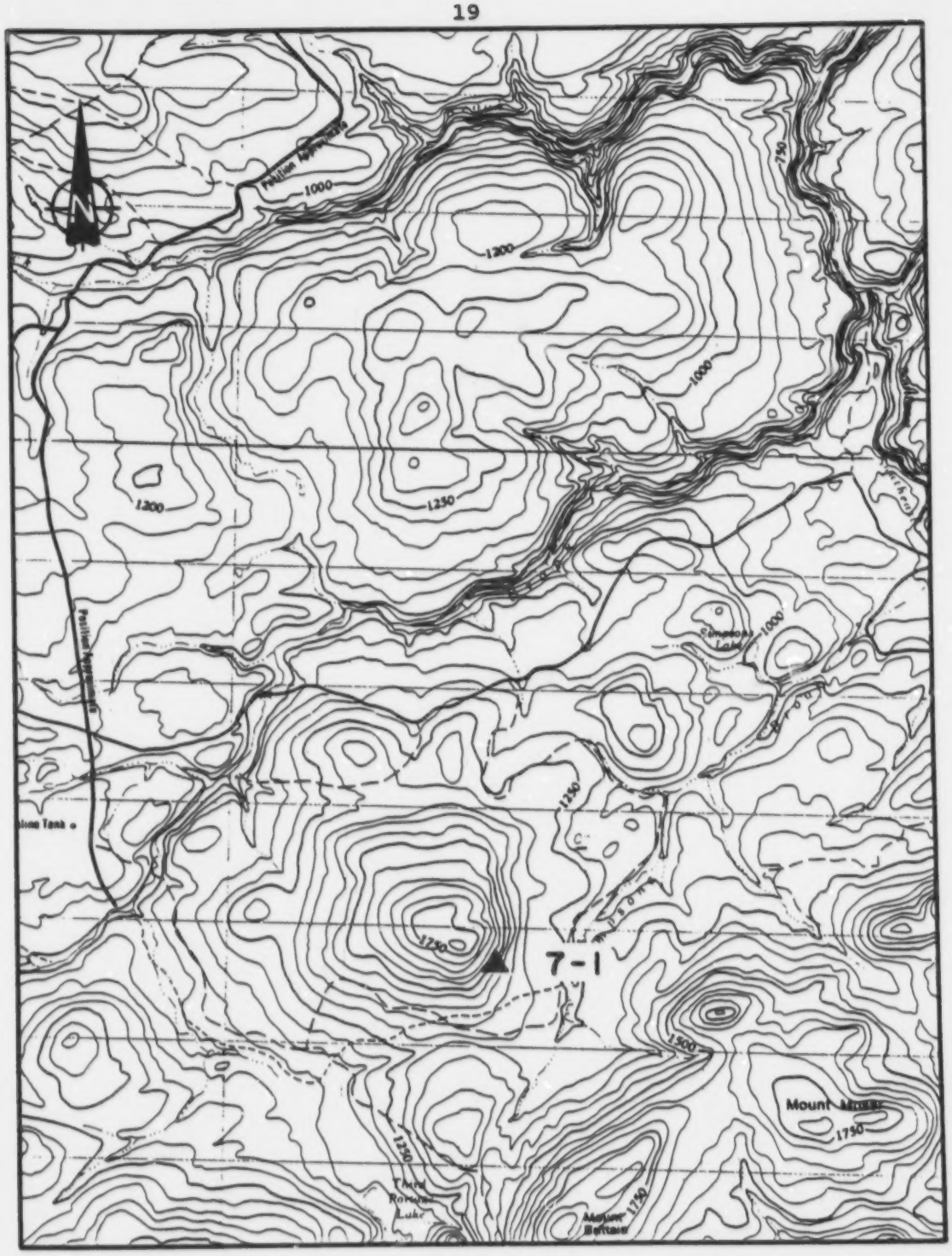


Figure 4 Site location map for Unit 7 (scale 1:50,000).

### 3.1.4 Unit 8 West Portage Brook Troctolite

| | |
|---|---|
| COMMODITY: | Granite COLOUR: Black |
| LOCATION: | Popple Depot, 70 km west-southwest of Bathurst. |
| N.T.S: | 21 O/07 |
| ACCESS: | Highway 430 and Consolidated Bathurst haulage road. |

DESCRIPTION

GEOLOGICAL SETTING: This unit is part of the mafic suite of the Mount Elizabeth Intrusive Complex (SEmp) and is Silurian to Devonian age. It is located near the north western corner of the Miramichi Anticlinorium.

PREVIOUS WORK: Paktunc 1987; Whalen 1987, 1988: Fyffe et al. 1981.

GEOLOGY: This is a small layered intrusion of predominantly troctolite. It contains subordinate amounts of peridotite, anorthosite and anorthositic gabbro, most of which can be considered as mesocumulate. Layering is defined by varying amounts of olivine, pyroxene and plagioclase and planar laminations of plagioclase. The intrusion has a basin-like structure and youngs toward the north.

SITE SUMMARY: Site 8-1 is in the northern section of the unit. It is medium-grained and has a blue grey colour with black spotting. The site is intensely jointed with a potential block size of 1 X 1 X 0.5m. A weak foliation was noted locally.

Site 8-2 is in the southern section of the unit. The rock is medium to coarse grained and is nearly black in colour. It is moderately jointed with a potential block size of 1 X 1 X 1.5m.

SAMPLES: Polished and honed 8-1
Polished and honed 8-2

**DEVELOPMENT POTENTIAL:**

Based on observed outcrop exposures, the southern section of the unit appears to have the best potential for development. The consistent blackcolour andreasonable block sizes appear to enhance itsoverall potential. The northern portion also displays an attractive colour but block size seems smaller suggestinghigh waste-to-product ratios and higher production costs.

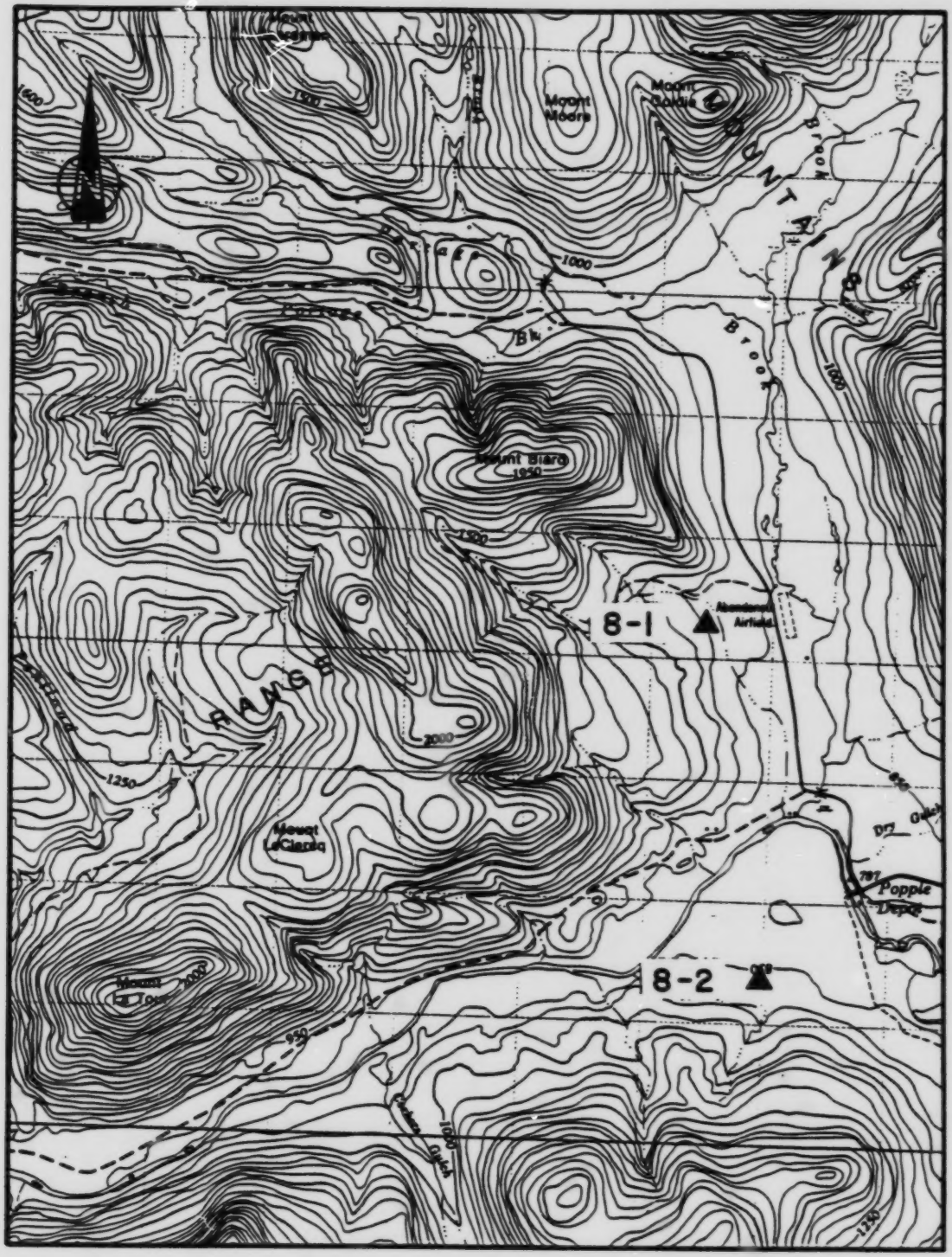


Figure 5 Site location map for Unit 8 (scale 1:50,000).

### 3.1.5 Unit 9 Mount Walker Troctolite

| | |
|---|---|
| COMMODITY: | Granite COLOUR: Black |
| LOCATION: | Several areas located west and south of Popple Depot,75 km southwestof Bathurst. |
| N.T.S.: | 21 O/7 and 21 O/8 |
| ACCESS: | The numerous individual intrusions that comprise this unit can be accessed via several logging roads off the main haul roads in the area. |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | This unit is part of the mafic suite of rocks in the Mount Elizabeth Intrusive Complex (SEmd). |
| PREVIOUS WORK: | Whalen 1987 and 1988; Fyffe et al. 1981; Helmstaedt 1971. |
| GEOLOGY: | This unit "includes fine- to medium-grained, porphyritic and equigranular ophitic diabase; medium- to coarse-grained gabbro and minor occurrences of diorite to quartz diorite"(Whalen 1987). |
| SITE SUMMARY: | Site 9-1 is a black fine-grained diabase that contains numerous veins. At this site the unit is intensely fractured and has little potential.<br><br>Site 9-2 is very similar to Site 9-1 but veining is more prevalent.<br><br>Site 9-3 is also similar to 9-1 but is deeply weathered. |
| SAMPLES: | Polished and honed 9-1<br>Polished and honed 9-2 |
| DEVELOPMENT POTENTIAL: | The intense fracturingfound in this unit indicates a very low potential for utilization. |

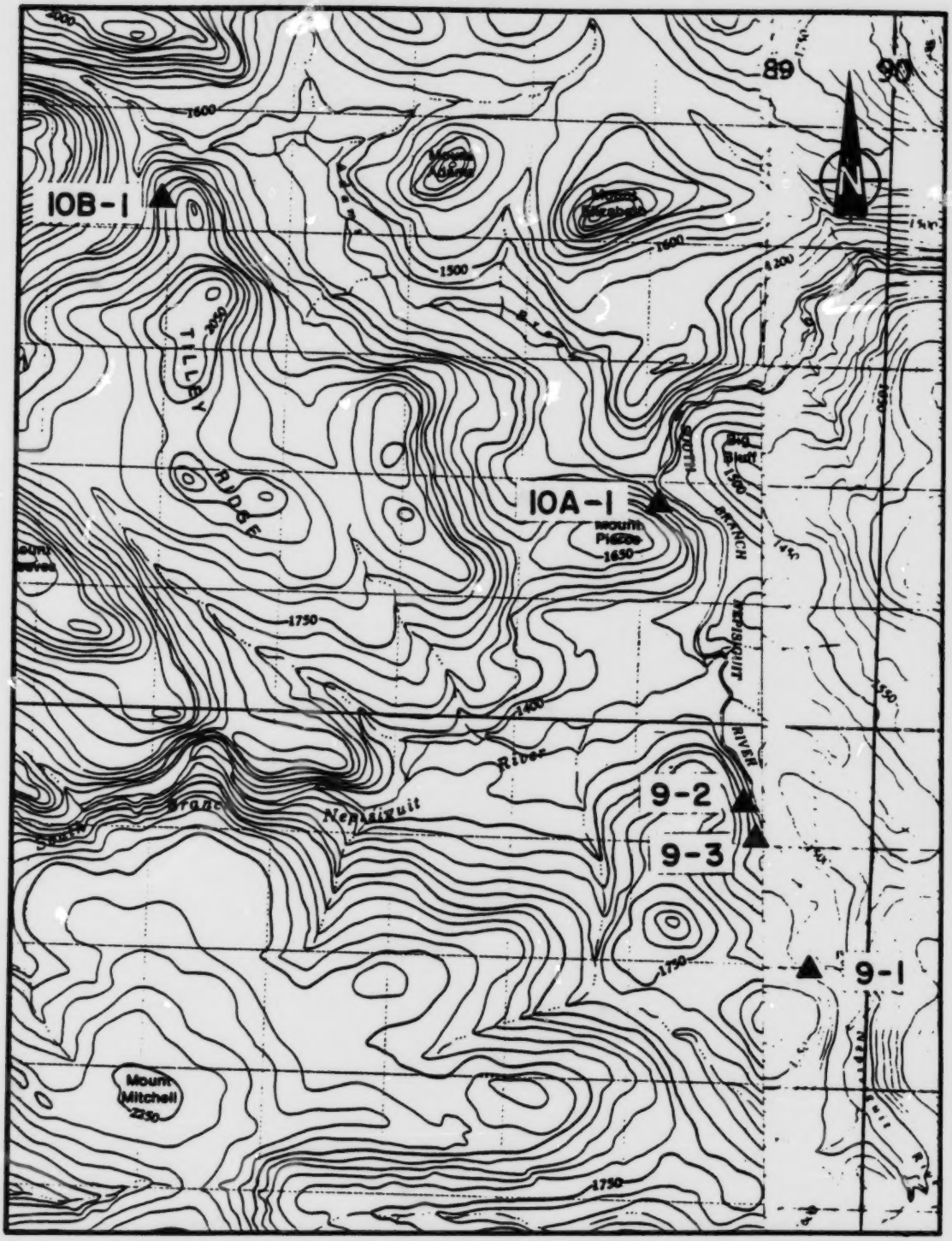


Figure 6 Site location map for Unit 9 (scale 1:50,000).

### 3.1.6 Unit 10a Mount Elizabeth Biotite Granite

| | |
|---|---|
| COMMODITY: | Granite COLOUR: Pink |
| LOCATION: | A large intrusive body 5 km south of Popple Depot, 70 km southwest of Bathurst. |
| N.T.S.: | 21 O/8 |
| ACCESS: | From the main South Nepisiguit - South Sevogle River Road. |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | The rocks of this unit comprise the biotite-granite phase of the alkaline granite suite of the Mount Elizabeth Intrusive Complex (SEpg). |
| PREVIOUS WORK: | Work by Whalen (1987,1988) is the most recent and includes references to previous workers in the area. |
| GEOLOGY: | This part of the Mount Elizabeth Intrusive Complex consists primarily of pink and white, equigranular, biotite granite. |
| SITE SUMMARY: | Site 10a-1 was representative of several outcrops in the area. All were highly weathered and tended to flake horizontally. The rock is a pinkish-grey, medium-grained equigranular granite. Iron staining occurs locally. Jointing displays a regular pattern at spacings no greater than 1.5m. Sheet joints are spaced at 30 cm intervals. A poorly developed fabric, parallel to the primary joints is present. Sheet joints are spaced at 30 cm intervals. |
| SAMPLES: | Large sample, not finished 10a-1 |
| DEVELOPMENT POTENTIAL: | The high degree of weathering, readily available colour, limited block size and iron staining limits the development potential of this unit. |

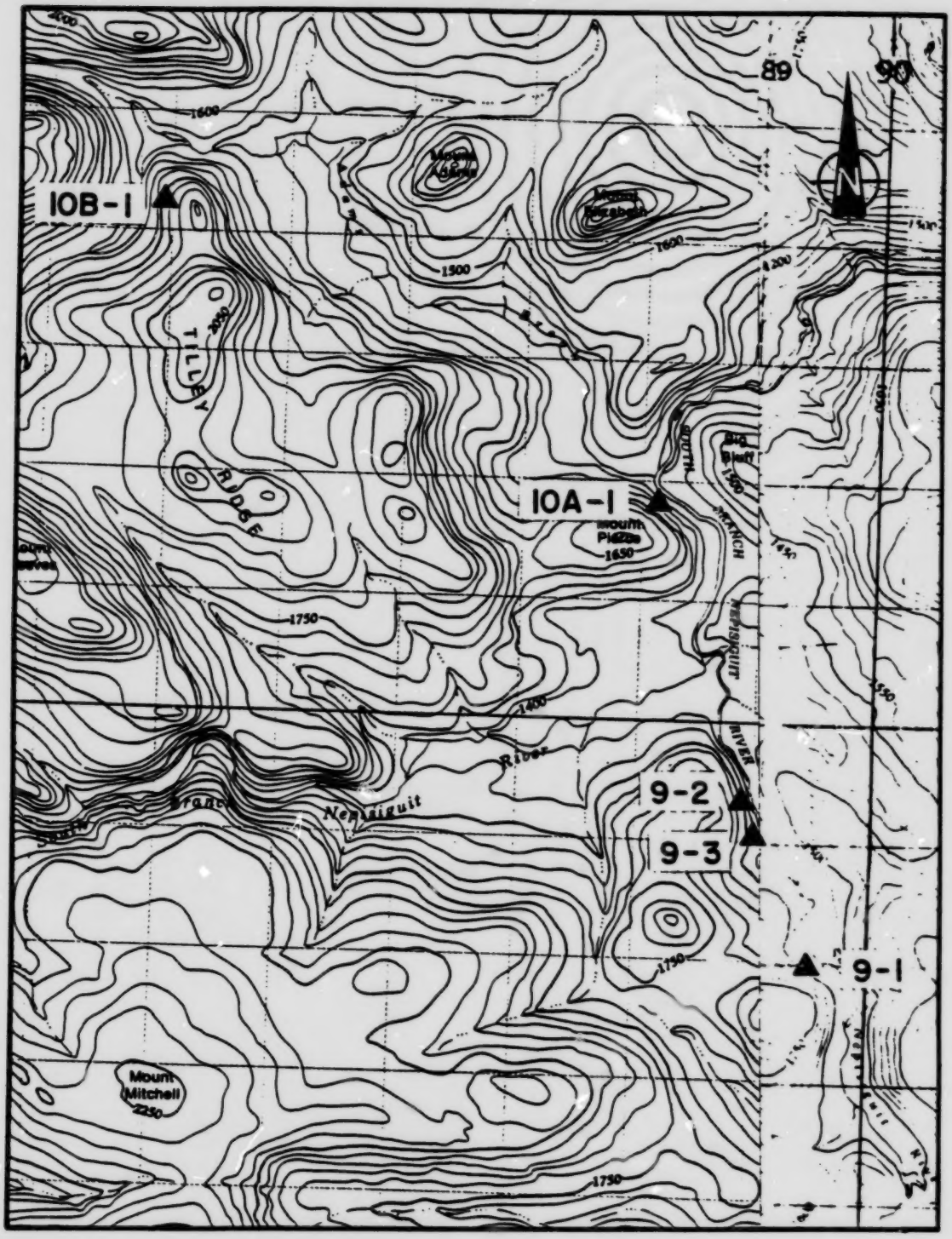


Figure 7 Site location map for Unit 10a (scale 1:50,000).

### 3.1.7 Unit 10b Mount Elizabeth Alkaline Granite

| | |
|---|---|
| COMMODITY: | Granite COLOUR: Red |
| LOCATION: | Several intrusive bodies 100 km northwest of Newcastle. |
| N.T.S.: | Parts of 21 O/7 and 21 O/8 |
| ACCESS: | Highway 430, haulage roads and local logging roads. |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | The rocks of this unit are part of the alkaline granite suite of the Silurian Mount Elizabeth Intrusive Complex (SEag). |
| PREVIOUS WORK: | Work by Whalen (1987, 1988) is the most recent and includes references to previous workers in the area. |
| GEOLOGY: | The majority of this unit is a red, medium- to coarse-grained, equigranular granite that typically contains only orthoclase. The rock also contains amphibole and a red-brown biotite (Whalen, 1987). |
| SITE SUMMARY: | Actual outcrop was not observed at Site 10b-1 (Tilley Ridge) but numerous boulders present (all of the same lithology) suggest the presence of the alkali granite at that location. The boulders are salmon pink in colour, and are a medium-grained, equigranular granite with up to 15% biotite. Field checks of occurrences at nearby Mount La Tour, Mount Des Barres and Marie Plateau were unsuccessful in locating significant exposures. |
| SAMPLES: | Polished and honed - suboutcrop 10b-1 |
| DEVELOPMENT POTENTIAL: | The colour of the unit suggests a favourable potential but the lack of outcrop limits a full assessment of its potential. Consists of several intrusions, that warrant evaluation. |

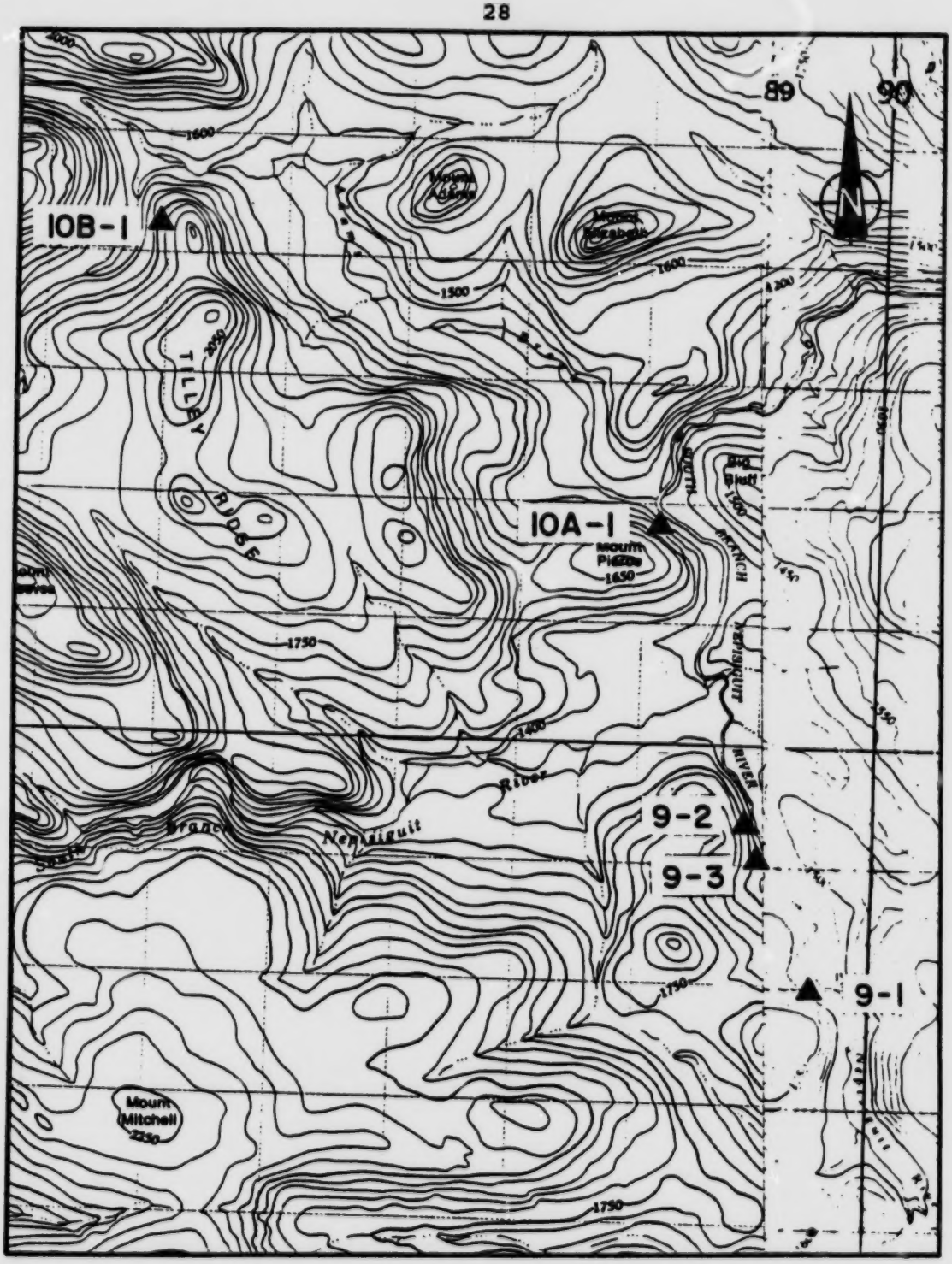


Figure 8 Site location map for Unit 10b (scale 1:50,000).

### 3.1.8 Unit 10d Mount Elizabeth Complex - Syenite

| | |
|---|---|
| COMMODITY: | Granite COLOUR: Black |
| LOCATION: | 5.5 km southwest of Popple Depot, 75 km southwest of Bathurst. |
| N.T.S.: | 21 O/7 |
| ACCESS: | Highway 430 and Consolidated Bathurst haulage road. |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | This unit is part of the alkaline granitic suite of the Mount Elizabeth Intrusive Complex (SEas). |
| PREVIOUS WORK: | Whalen 1987,1988. |
| GEOLOGY: | The rock from this unit is dark blue-green with a red-brown weathering. It is a fine-grained syenite containing quartz, plagioclase and accessory minerals. |
| SITE SUMMARY: | Outcrop areas examined were found to be intensely fractured (10 cm spacings) and had limited potential. A site data record was not completed and a sample was not collected. |
| DEVELOPMENT POTENTIAL: | The high degree of fracturing observed within this unit indicates a very low potential for use as a dimension stone. |

### 3.1.9 Unit 10f Mount Elizabeth Complex - Quartz Monzonite

| | |
|---|---|
| COMMODITY: | Granite COLOUR: Grey |
| LOCATION: | 10 km southwest of Popple Depot, 80 km southwest of Bathurst. |
| N.T.S.: | 21 O/7 |
| ACCESS: | Highway 430 and haulage roads of Consolidated Bathurst and Miramichi-Repap. |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | This unit is a member of the alkaline granite suite of the Mount Elizabeth Intrusive Complex (SEag). |
| PREVIOUS WORK: | Whalen 1987, 1988. |
| GEOLOGY: | The rock within this unit is "a beige-grey to orange, fine- to medium-grained biotite-amphibole quartz monzonite. A notable feature of this rock is euhedral white plagioclase grains which are prominent on weathered surfaces." |
| SITE SUMMARY: | The outcrops examined in this unit were highly fractured and had little potential. A site data record was not completed and a sample was not collected. |
| DEVELOPMENT POTENTIAL: | This unit appears to have very low potential as a dimension stone due to intense fracturing. |

### 3.1.10 Unit 11 Goodwin Lake Gabbro

| | |
|---|---|
| COMMODITY: | Granite COLOUR: Black |
| LOCATION: | Northeast of Goodwin Lake, 6 km south of Little Bald Mountain, 45 km southwest of Bathurst. |
| N.T.S.: | 21 O/8 |
| ACCESS: | Highway 430, Fraser-Burchhill road and poor trail along the Northwest Miramichi River. |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | This unit is part of the mafic suite of the Mount Elizabeth Intrusive Complex (SEmG), which is Silurian to Devonian age. |
| PREVIOUS WORK: | Whalen 1987, 1988; Paktunc 1988. |
| GEOLOGY: | The Goodwin Lake intrusion consists of two bodies. One is a 4 kilometre long lens extending northwest of Goodwin Lake; the second is a small circular body 2 kilometres northeast of Goodwin Lake. The western body consists of gabbronorite, norite and gabbro with minor olivine gabbro, troctolite and peridotite. The eastern part consists of peridotite, troctolite, norite and gabbronorite. All rocks are cumulates. The intrusion is mostly medium grained, with pegmatitic portions encountered near its core. Centimetre scale layering and modal laminations are well developed in the troctolites. |
| SITE SUMMARY: | Site 11-1 is in the eastern body of the unit. The rock is black, medium-grained and contains some minor sulphides. The full extent of this unit could not be evaluated due to weather and road conditions. However, the area should be accessible in dry summer conditions. |
| SAMPLES: | Polished and honed 11-1 |

**DEVELOPMENT POTENTIAL:**

Based on its black colour, this unit has some potential. Although it was not observed in outcrop, several large pieces ($1m^3$) of float were found in the area. Minor disseminated sulphides were noted. Some difficulties were encountered in obtaining a consistent polished surface on the finished slab.

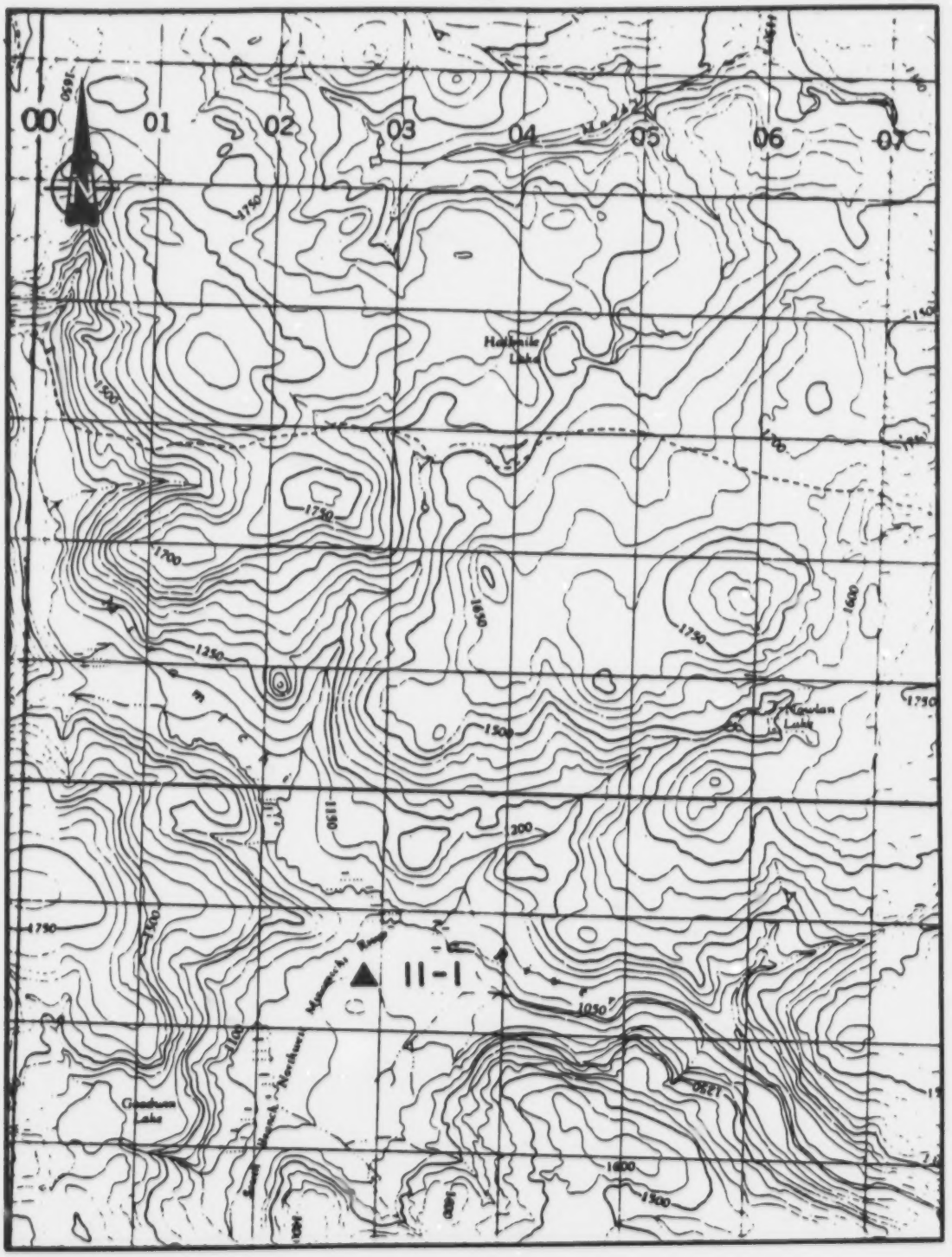


Figure 9 Site location map for Unit 11 (scale 1:50,000).

### 3.1.11 Unit 12 Miramichi Granite

| | |
|---|---|
| COMMODITY: | Granite COLOUR: Pink |
| LOCATION: | Northumberland County, 20 km south-southeast of Popple Depot. |
| N.T.S.: | 21 O/1 |
| ACCESS: | The unit is crossed by the Fraser Burchill Road and small bush roads. |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | The area is underlain by Silurian granitic rocks known as the Miramichi granite (Sm). |
| PREVIOUS WORK: | The area has most recently been mapped by Whalen (1988). Previous workers in the area are referenced in Whalen (1988). |
| GEOLOGY: | The Miramichi granite has considerable textural variation from massive, grey and pink, medium- to coarse-grained equigranular granite (Irrinki, 1986) to seriate, and to K-feldspar porphyritic varieties (Whalen, 1988). Quartz, orthoclase, plagioclase, biotite and opaques are the major constituents of the granite, with saussuritization and sericitization of the feldspar being common (Irrinki, 1986). |
| SITE SUMMARY: | At Site 12-1 the granite is a pinkish-grey, seriate granite with the largest crystals being of K-feldspar and up to 1 cm in size. The mafic minerals and opaques are fine grained. The rock weathers to a white colour, possibly due to saussuritization of the feldspars. Also, there is a pervasive iron-staining found throughout the samples collected. Joints are widely spaced and vertical (commonly about 2 m). Sheet joints were found at less than 1 metre. Occasional quartz veins were noted. |
| SAMPLES: | Large sample, not finished 12-1 |

**DEVELOPMENT POTENTIAL:**

This unit appears to have potential for large block sizes. The only limiting factor may be the colour and the degree of weathering (including the iron staining), which is found throughout the samples collected. Outcrop is difficult to locate in the area underlain by this unit.

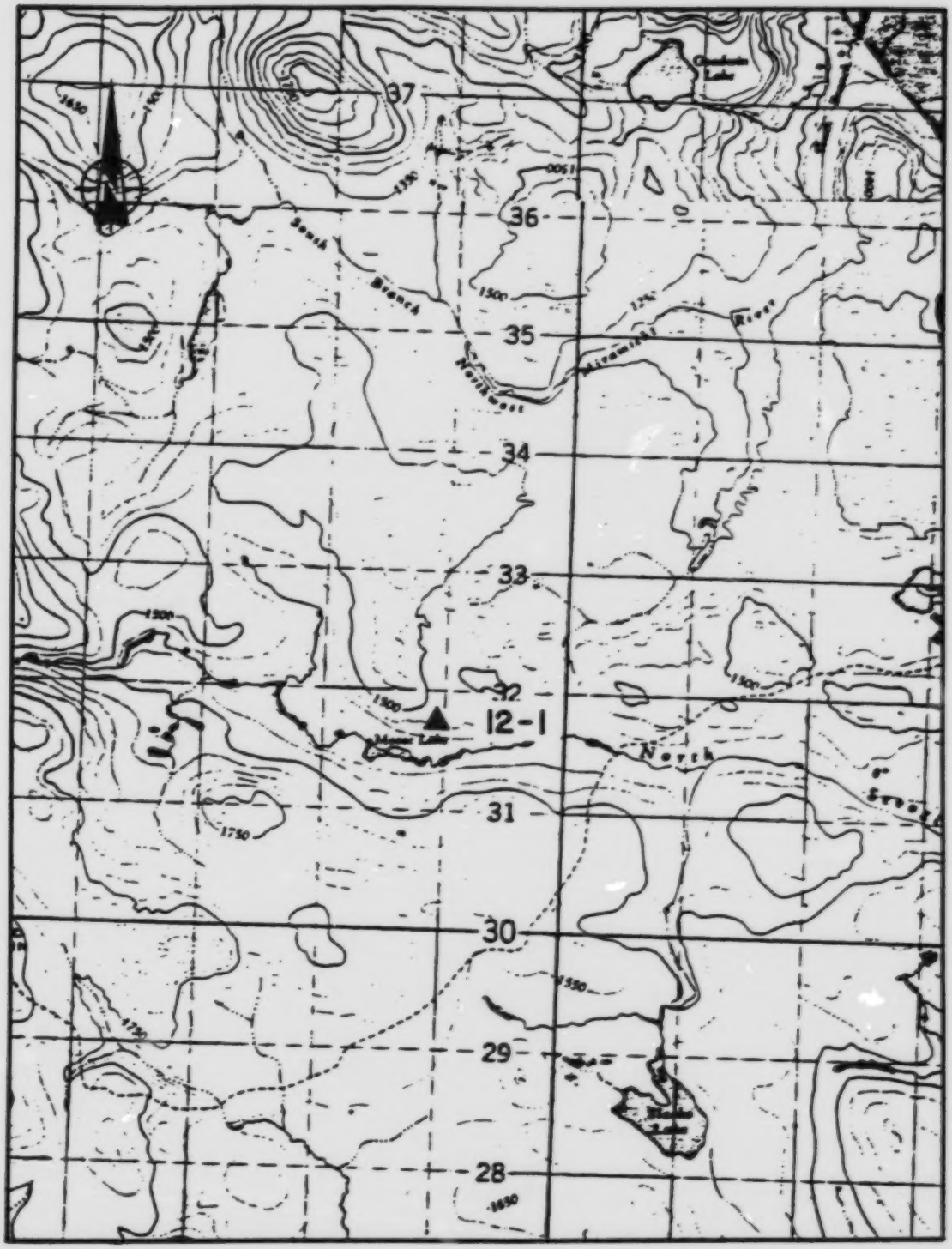


Figure 10 Site location map for Unit 12 (scale 1:50,000).

### 3.1.12 Unit 14a North Pole Stream Biotite Granite

| | |
|---|---|
| COMMODITY: | Granite COLOUR: Grey |
| LOCATION: | An extensive area from Trousers Lake, east to Big Bald Mountain, 80 to 95 km west of Newcastle. |
| N.T.S.: | 21 O/1, 21 O/2 |
| ACCESS: | The northeastern part of this unit is accessed by the main South Nepisiguit - South Sevogle River road. The southwestern section is accessed from the Repap-Miramichi haul road off Highway 108 northwest from McGraw Brook. |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | The area is underlain by Silurian rocks of the North Pole Stream granite suite (SNg). |
| GEOLOGY: | This unit is the main intrusive phase of the North Pole Stream granite suite, and is "medium- to coarse-grained, equigranular to K-feldspar porphyritic, white and pink biotite granite" (Whalen, 1987). |
| SITE SUMMARY: | Site 14a-1 is in the western portion of the intrusion, near Gover Mountain. The rock in this area is a grey medium-grained equigranular granite. Weathering has imparted a 'crumbly' texture to the surface. The rock displays wide regular jointing with a potential block side of 2 X 3 X 1 m.<br><br>Site 14a-2 is located in the central portion of the intrusion at Sproule Ridge. The rock in this area is pink, medium- grained, and weakly foliated and contains phenocrysts. The jointing is variable but generally is moderate and irregular. A secondary joint or fracture set reduces potential block size of 1 X 2 X ND. |

Site 14a-3 is located just northeast of Hickey Lakes in the southeast portion of the unit. It is pale pinkish grey, medium-grained with phenocrysts and has a very weak foliation. It has a widely spaced dominant joint set that is over-printed by a second joint set. Potential blocks range up to 2 X 2 X 1 m in size. Xenoliths are moderately scattered throughout the rock.

The outcrop at site 14a-4 is a medium- to coarse-grained, massive, pink granite. There were no imperfections noted. Joints were in a regular pattern with spacings varying between 10 cm and 3 m. Sheeting was not observed, but a horizontal fabric is accentuated by weathering and in places makes the rock quite friable.

Site 14a-5 is similar rock but it is more highly weathered.

**SAMPLES:**

Polished and honed 14a-1
Polished and honed 14a-2
Polished and honed 14a-3
Polished and honed 14a-4
Polished and honed 14a-5

**DEVELOPMENT POTENTIAL:**

This granite body covers an extensive area. It varies somewhat in colour, texture and degree of foliation throughout. Each site investigated has potential for good block size (2 X 3 X 1 m). However, both the grey and pink phase are fairly common colours in the stone industry. The main deterrent for this particular unit are the areas where deep weathering occurs. Weathered zones range from a thin crumbly surface to 5 m of in situ material weathered to the coarse sand size. The degree of weathering also brings into question the long-term structural integrity of the stone.

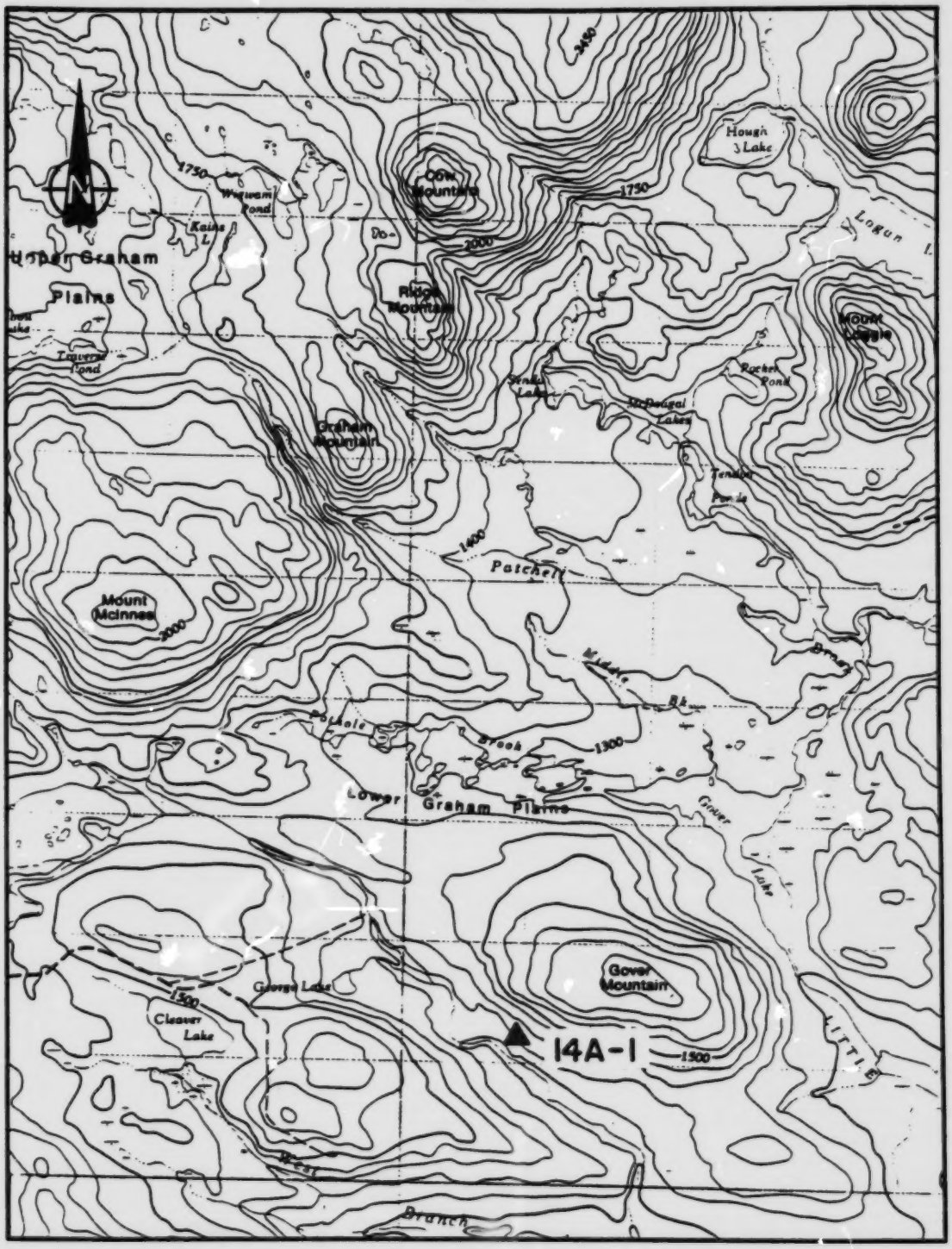


**Figure 11a Site location map for Unit 14a (scale 1:50,000).**

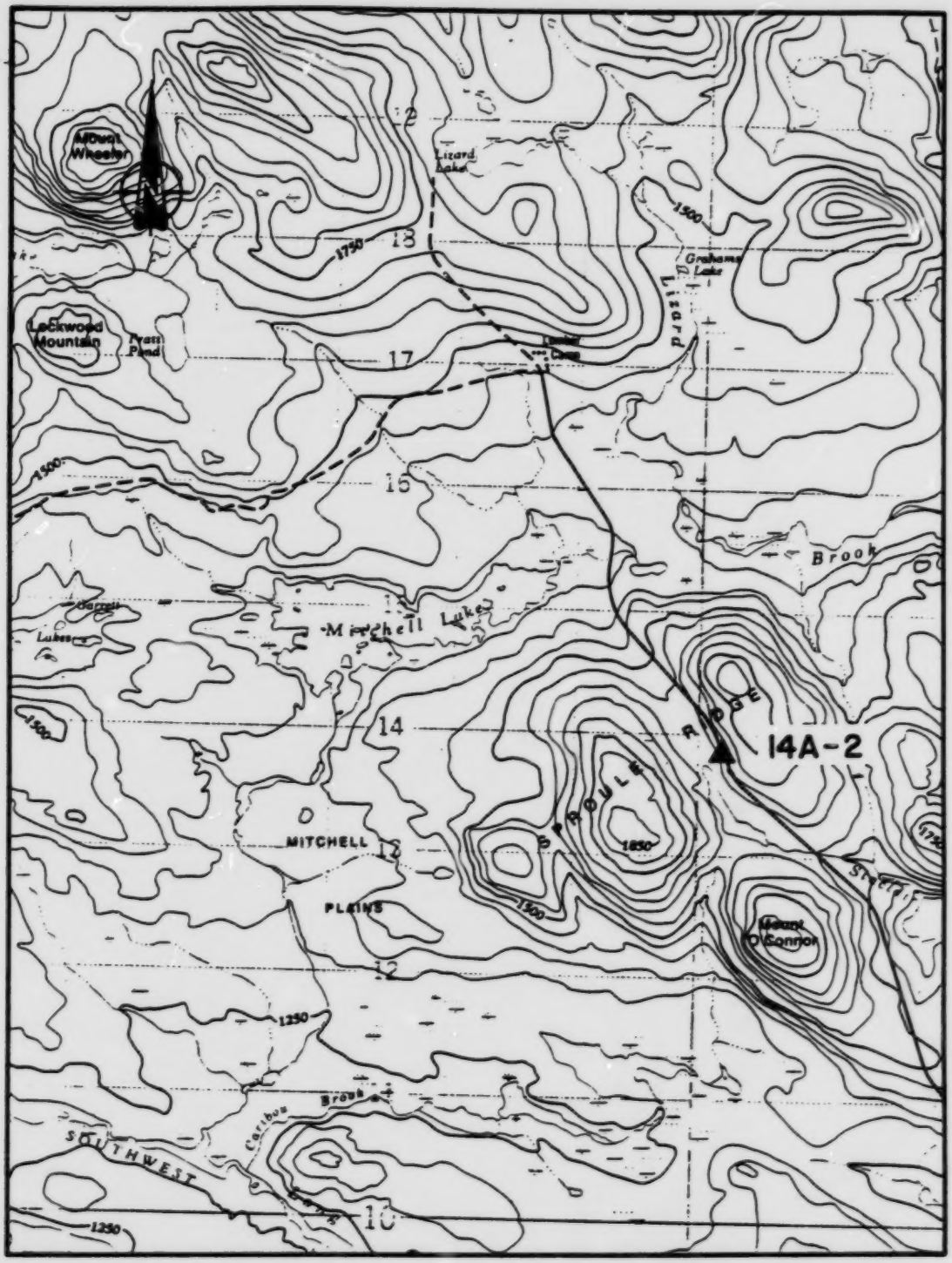


Figure 11b Site location map for Unit 14a (scale 1:50,000).

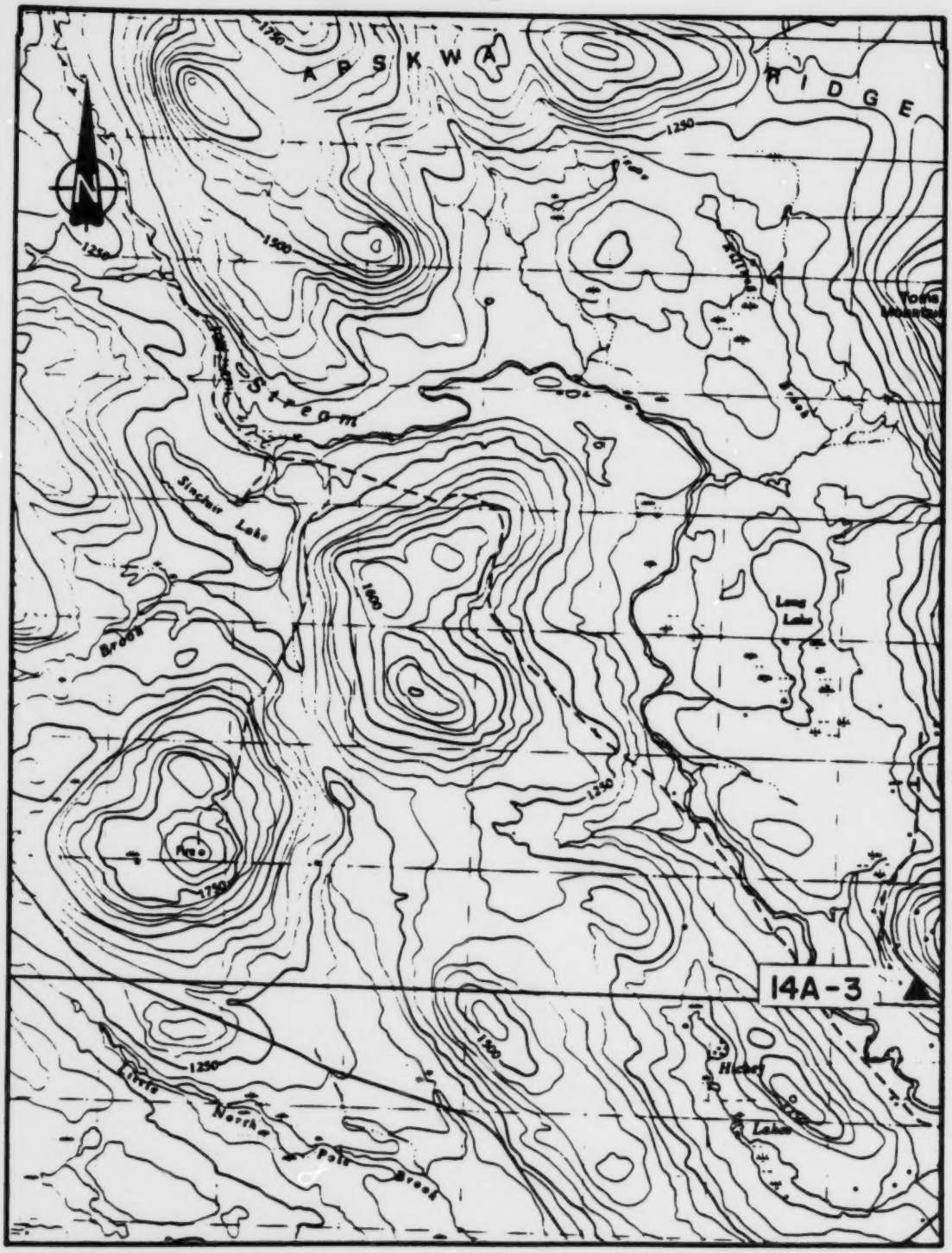


Figure 11c Site location map for Unit 14a (scale 1:50,000).

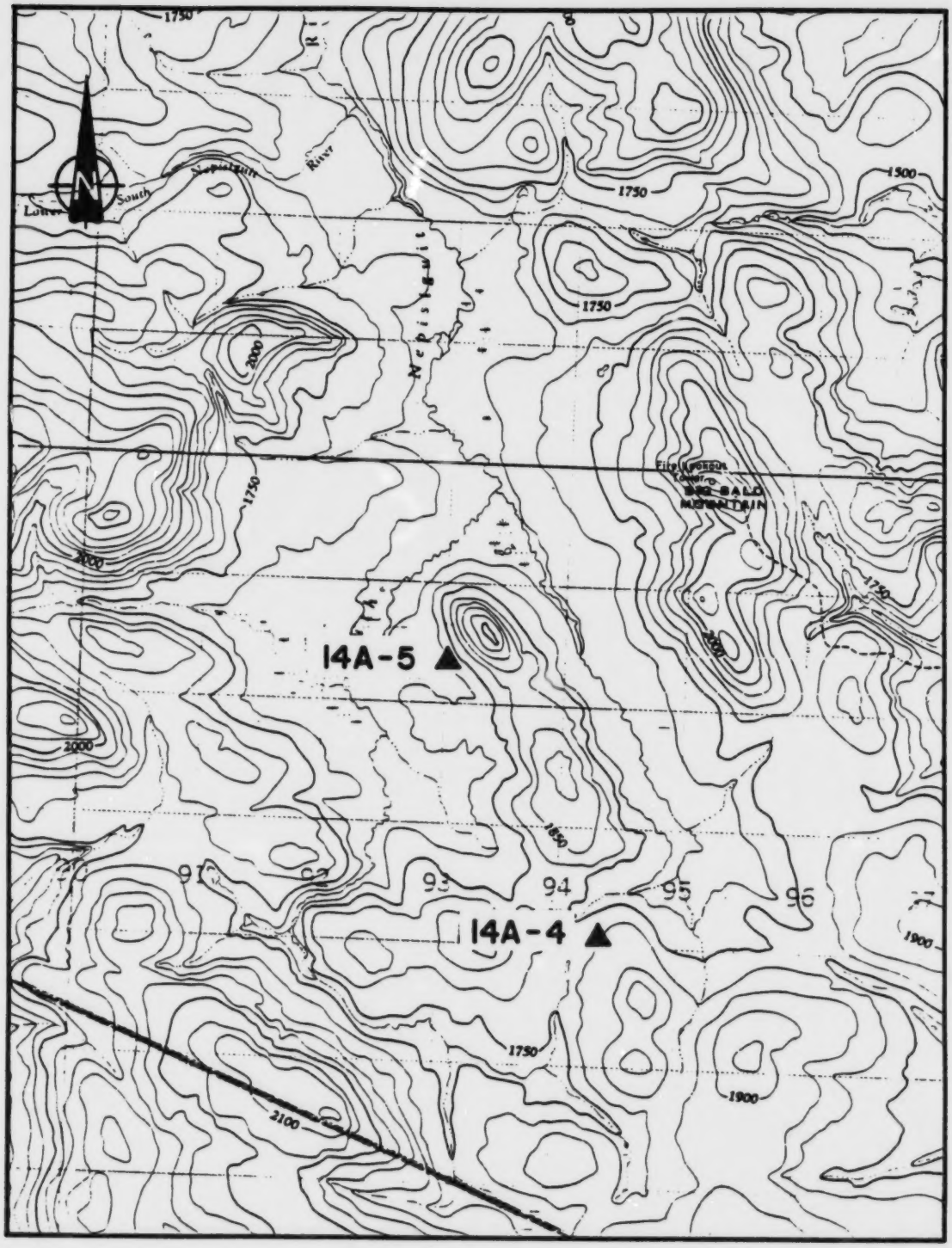


Figure 11d Site location map for Unit 14a (scale 1:50,000).

### 3.1.13 Unit 14c North Pole Stream Granite

| | |
|---|---|
| COMMODITY: | Granite COLOUR: White |
| LOCATION: | Cleaver Lake to Lizard Lake, 80 km west of Newcastle. |
| N.T.S.: | 21 O/2 |
| ACCESS: | Highway 108, Repap-Miramichi haulage road from McGraw Brook and secondary logging roads. |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | This unit is a late stage intrusive cutting the extensive SNg unit (see unit 14a). Both units belong to the North Pole Stream granite intrusive suite (SNm). |
| PREVIOUS WORK: | Whalen 1987,1988; Crouse 1979. |
| GEOLOGY: | This unit consists of a fine- to medium-grained, white, muscovite-biotite granite (Whalen 1988). It commonly contains dark grey 'spots' consisting of aggregates of muscovite and biotite (Crouse, 1979). |
| SITE SUMMARY: | This unit was only found as float. It appears to have been highly fractured. It is locally altered to a orangish colour. A site data record was not completed and a site location map has not been prepared. No sample was collected. |
| DEVELOPMENT POTENTIAL: | This unit has a low potential due to the apparent fracturing and unappealing micaceous clots. |

### 3.1.14 Unit 14d North Pole Stream Granodiorite

COMMODITY: Granite COLOUR: Grey

LOCATION: 7.5 km southeast of Big Bald Mountain, 55 km north-northwest of Newcastle in Northumberland County.

N.T.S.: 21 O/1

ACCESS: By secondary logging roads and bush roads from the main South Nepisiguit - South Sevogle River Road.

DESCRIPTION

GEOLOGICAL SETTING: The area is underlain by granodiorite of the North Pole Stream granite suite (SNgd).

PREVIOUS WORK: The area has been mapped by Whalen (1987,1988), Irrinki (1986) and others (see Whalen, 1988).

GEOLOGY: This unit is a phase of the main North Pole Stream Granite. It is described as grey to black biotite granodiorite. It contains numerous xenoliths, which may be a result of proximity to the margin of the pluton (Irrinki, 1986; Whalen, 1987).

SITE SUMMARY: Site 14d-1 was the most northerly of this series of outcrops along the road from the southern part of the unit. It is a fine- to coarse-grained inequigranular grey granite with sparsely distributed plagioclase phenocrysts. The percentage of xenoliths is high. They vary from 2 to 5 cm in diameter, are elongate and not preferentially aligned except locally. Joints are vertical and widely spaced, (1 to 5 m). Outcrops to the south become more variable in every aspect, including type and size of xenolith, variability of grain size, increased veining, and decreased spacing of joints.

Site 14d-2 is from the northern portion of the pluton. It displays regular

widely spaced jointing and is very similar to Site 14d-1 in colour and texture. Iron staining was noted within the weathered zone.

**SAMPLES:** Polished and honed 14d-1
Polished and honed 14d-2

**DEVELOPMENT POTENTIAL:** In the vicinity of Site 14d-1 the block size suggests this unit has good potential. Joint spacing decreases to the south, nearer to the margin of the pluton. It appeared to increase to the north based on field observations. The abundance of small xenoliths, the presence of biotite, and iron staining detract from the development potential.

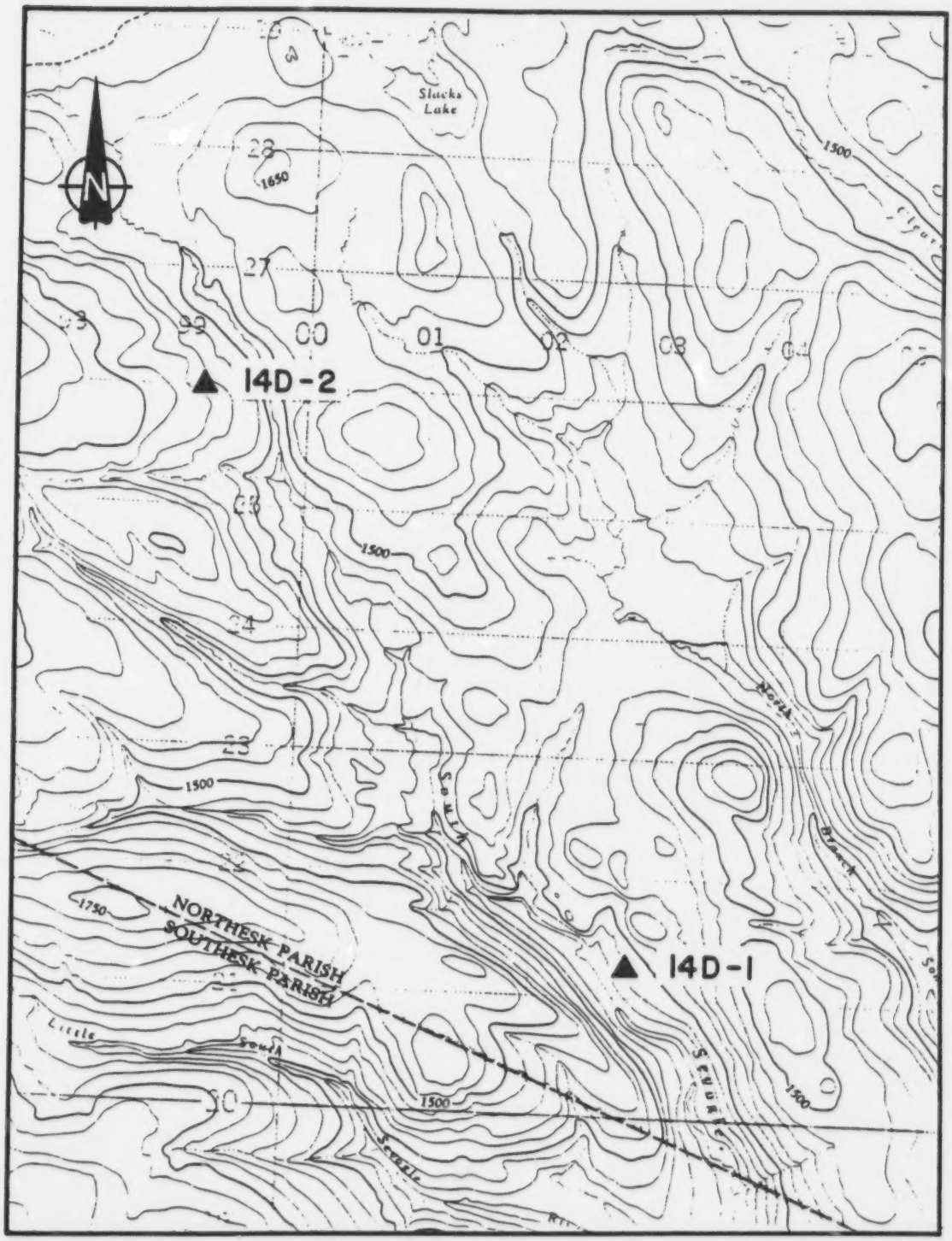


Figure 12 Site location map for Unit 14d (scale 1:50,000).

### 3.1.15 Unit 14e North Pole Granite - Mafic Suite

| | |
|---|---|
| COMMODITY: | Granite COLOUR: Dark Grey |
| LOCATION: | 4 km south of Sinclair Lake, 65 km west of Newcastle. |
| N.T.S.: | 21 O/2 |
| ACCESS: | Highway 108, Repap-Miramichi haulage road from McGraw Brook and Mitchell Lake road from Loggie Lodge. |

**DESCRIPTION**

| | |
|---|---|
| GEOLOGICAL SETTING: | This unit comprises a suite of mafic intrusives from the North Pole Stream Intrusive Complex (SNd). |
| PREVIOUS WORK: | Whalen 1987, 1988; Crouse 1979. |
| GEOLOGY: | The rock is a grey, medium-grained equigranular tonalite. It is veined by a network of pink granite dykes. Sparse fragments of dark green, medium-grained gabbro occur throughout. The tonalite is believed to have originated from the assimilation of the gabbro by the granite (Crouse 1979). |
| SITE SUMMARY: | Site 14e-1 displays intense random veining of coarser material. It has a regular 1 X 1 X 1 m joint set and appears to have a good structural integrity. The unit also contains moderate amounts of xenoliths. An area south of Hickey Lakes near Loggie Lodge has only scattered injection veins. |
| SAMPLES: | Polished and honed 14e-1 |
| DEVELOPMENT POTENTIAL: | This unit appears to have a good structural integrity and widely spaced joint sets for a dark (grey) granite. It has some potential if an area can be found that is void of veining. |

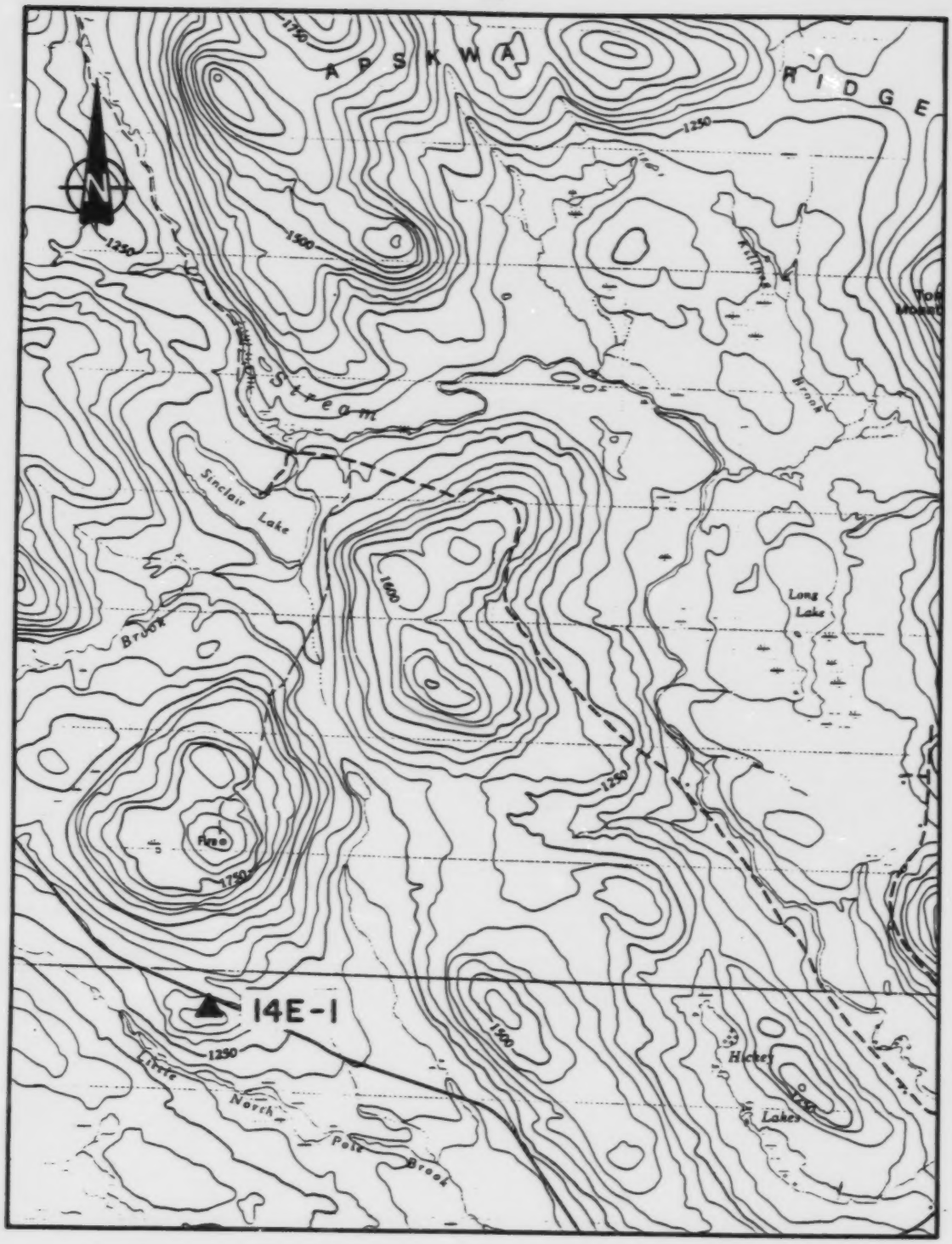


Figure 13 Site location map for Unit 14e (scale 1:50,000).

### 3.1.16 Unit 14f Squaw Lake Granodiorite

| | |
|---|---|
| COMMODITY: | Granite COLOUR: White |
| LOCATION: | 9 km east of Trousers Lake, 80 km west of Newcastle. |
| N.T.S.: | 21 J/15 |
| ACCESS: | Highway 108, Repap-Miramichi haulage road from McGraw Brook, numerous logging roads and trails (or via Fraser haulage road from Plaster Rock). |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | The Squaw Lake Granodiorite (Df) was included as a distinct phase of the North Dungarvon River Granite by Irrinki, 1978 and Fyffe et al. 1981. Skinner, 1975 considered it a separate pluton. Whalen, 1988 included it with the granodiorite phase of the North Pole Stream Intrusive Complex. |
| PREVIOUS WORK: | Whalen 1987,1988; Fyffe and Pronk, 1985; Fyffe et al. 1981; Irrinki, 1978; Skinner, 1975. |
| GEOLOGY: | The granodiorite is medium grained grey, equigranular and contains abundant xenoliths and minor amphibolite. Biotite and muscovite comprise 5 percent of the rock (Fyffe and Pronk, 1985). |
| SITE SUMMARY: | This unit was observed in outcrop at one location where it was a white medium-grained biotite granodiorite. It was characterized by intense irregular joints and fractures. A site data record and site location map were not prepared. |
| DEVELOPMENT POTENTIAL: | Locally this unit has a unique white colour. However, it may be difficult to find an exposure that has potential for good block size. |

### 3.1.17 UNIT 21 Dungarvon Granite

| | | |
|---|---|---|
| COMMODITY: | Granite | COLOUR: Pink |
| LOCATION: | 30 km north-northwest of Boiestown. | |
| N.T.S.: | Parts of 21 J/10 and 21 J/15 | |
| ACCESS: | From a gravel road between Holtville and the Plaster Rock - Renous Highway. | |

DESCRIPTION

GEOLOGICAL SETTING: Devonian rocks of the Dungarvon Granite (Dmf) comprise this unit.

PREVIOUS WORK: The most recent geological mapping was completed by Gardiner and Garrett, 1986. Other notable workers in the area include Irrinki (1980) and Irrinki (1981).

GEOLOGY: The Dungarvon Granite was described by Irrinki (1980) as a "Pink, red and grey, medium- to coarse-grained biotite granite that is strongly exfoliated".

"The granite is generally equigranular but varies to a subporphyritic texture with the presence of a few large alkali feldspar crystals (2 - 3 cm long) set in a medium- to coarse-grained equigranular groundmass consisting of quartz, feldspar and biotite."

"Quartz and biotite occur as subhedral to euhedral crystals while feldspar occur as anhedral to subhedral crystals."

"In places the granite has a rapakivi texture".

SITE SUMMARY: Most of the granite encountered in outcrop is extremely exfoliated and crumbles when touched. Two of the more competent outcrops were sampled.

Site 21-1 is representative of several outcrops that indicate the variability of the unit near its margins. The

sample taken was a pink, coarse-grained inequigranular granite with a low structural integrity. Joints, with spacings of less than 0.5 m, are irregularly oriented. (Some of the planar surfaces had slickensides on them.) Veins are relatively common. Outcrops in the vicinity are extremely variable in terms of colour and grain-size, with outcrops several hundred meters to the west being black, gneissic rocks.

Site 21-2 consists of a pink to orange, medium-grained and porphyritic biotite granite. Some of the phenocrysts display a rapakivi texture. Joint spacings of 1.5 m and 0.25 m were noted. A pervasive fabric is present and is oriented horizontally. In the same outcrop is a probable dyke of quartz-feldspar porphyry that tends to break into blocks approximately 10 cm square.

SAMPLES:

Large sample, not finished 21-1
Large sample, not finished 21-2

DEVELOPMENT POTENTIAL:

Based on the limited outcrop observed, the unit appears quite variable in terms of colour and texture. A major problem in assessing this unit is the extensive weathering of the granite. Also, some of the biotite in the rock is iron-stained. The unit includes colours that are of potential interest but an apparent lack of competency and small block size tend to limit its potential.

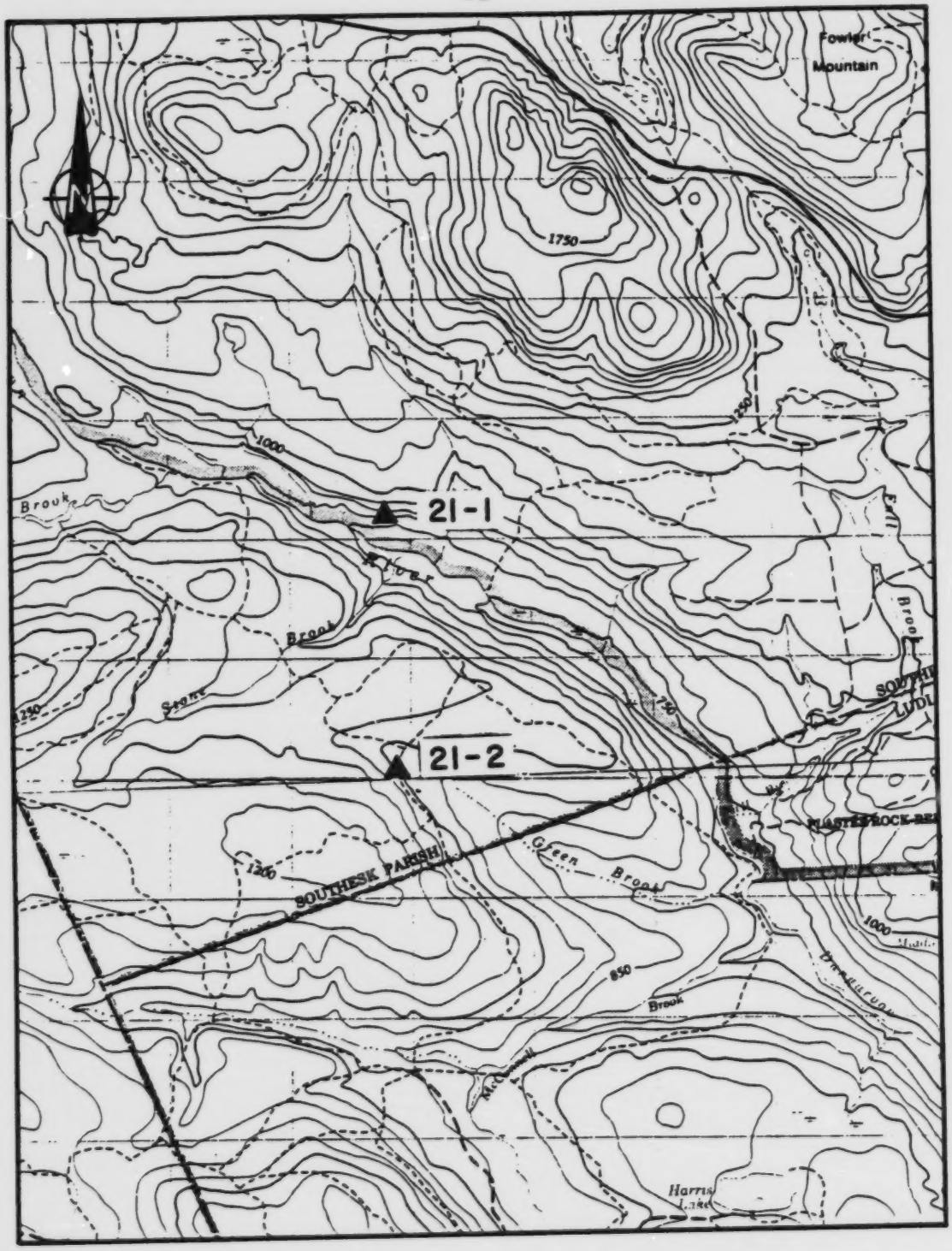


Figure 14 Site location map for Unit 21 (scale 1:50,000).

### 3.1.18 Unit 23 Becaguimec Lake Gabbro

| | |
|---|---|
| COMMODITY: | Granite COLOUR: Black |
| LOCATION: | 4 km east of Brighton Mountain, 70 km northwest of Fredericton. |
| N.T.S.: | 21 J/06; 21 J/03 |
| ACCESS: | Old Nashwaak River road from Highway 107 at Deersdale and/or Highway 104 and logging roads from Briggs Corner. |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | The Becaguimec Lake Gabbro (Dm)lies in the southwestern part of the Miramichi-Anticlinorium and has been intruded by the Nashwaak Granite (Lutes, 1981). |
| PREVIOUS WORK: | Lutes, 1981 and Venugopal, 1982. |
| GEOLOGY: | This elongated intrusive body is gabbroic in composition. It is typically dark green to green-black, fine- to medium-grained and ophitic. Compositional and textural variations are widespread. Fine-grained diabase dykes are common and multiple dykes are evident. |
| SITE SUMMARY: | Site 23-1 is in the northern portion of the unit. The rock in this area is highly fractured and has little potential for dimension stone. Numerous dyke/sill intrusions were observed at this location. The rock was deeply weathered and has iron staining due to sulphide mineralization. |
| SAMPLES: | Large sample, not finished 23-1<br>Hand samples of various layers/sills 23a,23b,23c |
| DEVELOPMENT POTENTIAL: | This unit has very low potential as a dimension stone. It is intensely fractured, has numerous dykes, and contains sulphides. |

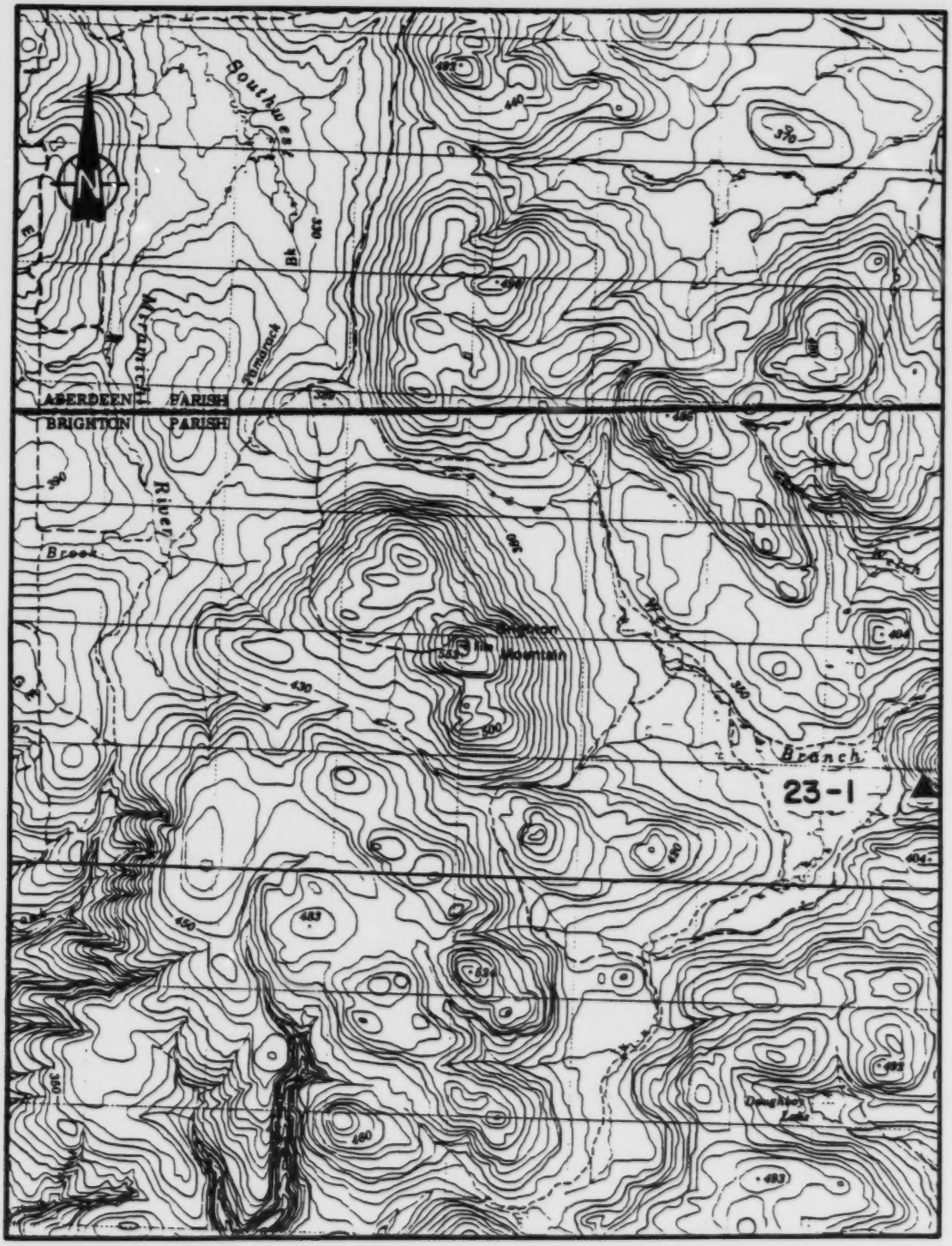


Figure 15 Site location map for Unit 23 (scale 1:50,000).

### 3.1.19 Unit 24 Nashwaak Granite

COMMODITY: Granite COLOUR: Grey

LOCATION: Immediately south of Nashwaak Lake, 65 km northwest of Fredericton.

N.T.S.: 21 J/06

ACCESS: Highway 107, the old Nashwaak River road and numerous logging roads southwest from Deersdale.

DESCRIPTION

GEOLOGICAL SETTING: The Nashwaak Granite ($Df_3$) is situated in the central southwest part of the Miramichi Anticlinorium. It has intruded the Becaguimec Gabbro and separates gneisses and foliated granites to the northwest from the Cambrian-Ordovician sedimentary and volcanic rocks to the east (Lutes, 1981).

PREVIOUS WORK: Lutes, 1981; Venugopal, 1982.

GEOLOGY: This unit is composed of grey to pink, medium-grained equigranular to subporphyritic biotite and muscovite-biotite granite. The granite contains 35-40% quartz, 20-35% plagioclase, about 20% alkali feldspar, 5-10% biotite and 5-10% muscovite.

SITE SUMMARY: Site 24-1 consists of a grey granite that is deeply surface-weathered to a brownish colour. It has a potential block size of 2 X 1 X 1 m. It contains scattered 2 cm xenoliths and 5-10% biotite.

Site 24-2 is similar to Site 24-1. The potential block size is 1.5 X 1 X 1 with variable to moderate jointing. Minor apatite dykes were found. The granite contains 15% biotite.

Site 24-3 consists of granite that has a smooth creamy appearance both in colour and texture. It has regular, moderate jointing. It contains moderate

joints. Portions exhibit intense jointing and iron staining.

At Site 24-4, the granite varies in colour from orangish (pink) to grey over a relatively small area. Jointing is moderate and irregular. Colour variation may be due to alteration adjacent to a small fault zone.

Site 24-5 is in the northwestern portion of the main granite body. The rock at this site is orange (pink) in colour and appears to be deeply weathered. This again is likely due to alteration adjacent to a small fault zone.

SAMPLES:

Polished, and honed, hand sample 24-1
Polished and honed, 24-2
Large sample, not finished 24-3
Large sample, not finished 24-4
Large sample, not finished 25-5

DEVELOPMENT POTENTIAL:

Locally this unit appears to have reasonable block sizes. Variations in colour and composition may limit the extent of suitable material. Potential finishing problems due to the large amounts of biotite is of some concern.

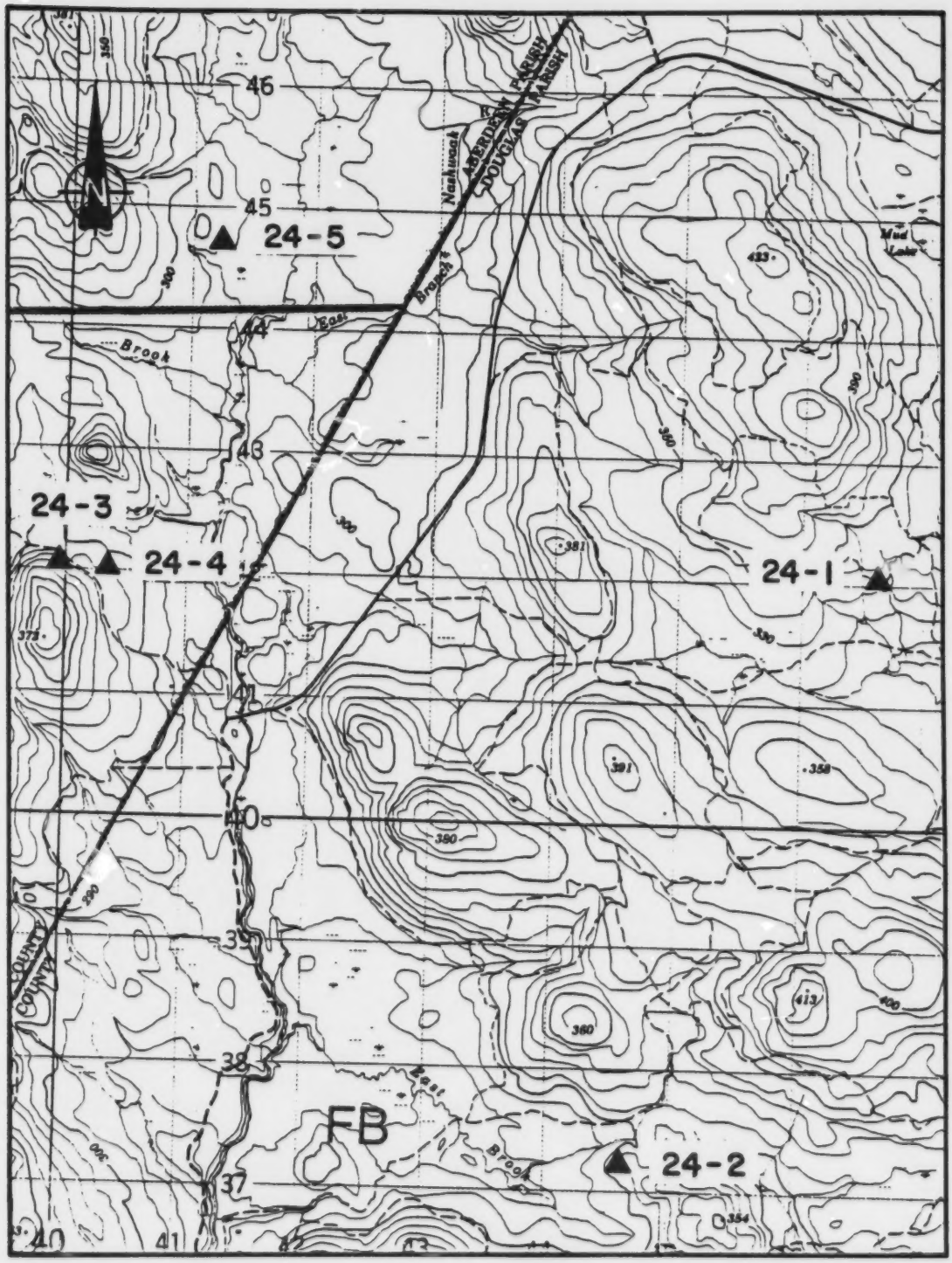


Figure 16 Site location map for Unit 24 (scale 1:50,000).

### 3.1.20 Unit 25 Howard Peak Granodiorite

| | |
|---|---|
| COMMODITY: | Granite COLOUR: Grey |
| LOCATION: | Howard Peak, 45 km northwest of Fredericton. |
| N.T.S.: | 21 J/06 and 21 J/03 |
| ACCESS: | Millville-Napadogan, Valley Forest Products haulage road and several logging roads. |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | The Howard Peak Granodiorite ($Df_z$) lies on the eastern boundary of the Miramichi Anticlinorium in contact with rocks of the Fredericton Synclinorium to the southeast. It has been intruded by the Nashwaak Granite to the west. |
| PREVIOUS WORK: | Lutes, 1981; Venugopal, 1982 |
| GEOLOGY: | The Howard Peak Granodiorite is a north-south-trending pluton. The predominant rock type is dark grey, medium-grained, and foliated, varying in composition from granodiorite to tonalite. The granodiorite locally grades into ophitic gabbro. The unit contains a number of schistose metasedimentary xenoliths ranging in size from a few centimetres to several metres. It possesses a weakly developed, steeply dipping, northerly trending cataclastic foliation. |
| SITE SUMMARY: | The few outcrops found within the map boundaries of this unit appeared to be more gneissic than granitic. They were highly fractured, had abundant quartz veins and lenses, and iron staining. |
| SAMPLES: | Two hand samples, 25a and 25b |
| DEVELOPMENT POTENTIAL: | The unit has a low potential for dimension stone based on the observed outcrops. |

### 3.1.21 Unit 29(a) Hawkshaw Granite (Allandale/Howard Peak)

| | |
|---|---|
| COMMODITY: | Granite COLOUR: Grey |
| LOCATION: | Four locations - Allandale, Granite Hill, East of Nackawic and 2 km east of Howard Peak (mainly 55 km west of Fredericton). |
| N.T.S.: | 21 G/14; 21 J/03; 21 J/06 |
| ACCESS: | Highways 2, 104, 105, and several logging roads. |

DESCRIPTION

GEOLOGICAL SETTING: The Allandale Granite (Hem) comprises four separate intrusions that make up about ten percent of the Hawkshaw Granite. The Hawkshaw Granite in turn makes up 60 percent of the Pokiok Batholith. The Pokiok Batholith separates the Miramichi and the Magaguadavic - St. Croix tectonostratigraphic zones.

PREVIOUS WORK: Lutes, 1987; Venugopal, 1982.

GEOLOGY: The four intrusions consist of grey, medium-grained equigranular to seriate muscovite-biotite granite. The granite contains 25-40% alkali feldspar, 15-30% plagioclase, 30-40% quartz, 1-3% biotite, and 0.5-1% muscovite.

Allandale: The largest intrusion of the unit is located south of the Saint John River in the Allandale area, extending southward to Kilburn Lake. The description of the granite in this area is the type section for this unit.

Granite Hill: This small intrusion is located east of Dumfries mainly on the north side of the Saint John River. The granite is generally a fine- to medium-grained equigranular rock. It is notably finer than other intrusions in the area and has less biotite but more muscovite.

Nackawic: Another intrusion is located just east of Nackawic on the north side of the Saint John River. The rocks are

Nackawic: Another intrusion is located just east of Nackawic on the north side of the Saint John River. The rocks are grey to pink, fine- to medium-grained, equigranular granite. It locally contains muscovite-rich aplites and pegmatites.

Howard Peak: A fourth intrusion is located near the tip of the northeastern lobe of the batholith at the intersection of the Valley Forest Products Road and Keswick River. The rock is pink, fine- grained equigranular muscovite-biotite granite.

SITE SUMMARIES:

Site 29a-1 is within the Allandale intrusion about mid-way between Shogomoc Lake and Flat Top Mountain. The granite in this area is typical of the intrusion. It displays moderate to widely spaced irregular jointing. A secondary joint set overprints the primary set and limits the frequency of large blocks.

Site 29a-2 is located east of Howard Peak on the Valley Forest Products haul road. It is a fine-grained, medium darkish grey orange (pink-brown) granite. Jointing appears to be irregular and moderate. The use of explosives has partially obliterated the original joint pattern. Local float of this unit averages 1.5 m in diameter.

The Granite Hill intrusion was field checked but outcrop of the unit could not be found. The east Nackawic intrusion was on freehold land and was not evaluated.

SAMPLES:

Polished and honed 29a-1
Polished and honed 29a-2

DEVELOPMENT POTENTIAL:

The best potential for this unit is from the Howard Peak intrusion. It has a unique colour. The float that was observed suggests the potential for good sized blocks. The intrusion in this area is relatively small and thus

reduces the likelihood of finding a suitable quarry site.
The larger Allandale intrusion has a common grey colour and medium grain size, which reduces its marketability. The topography of the area suggests there is a possibility of finding good blocks with further exploration.

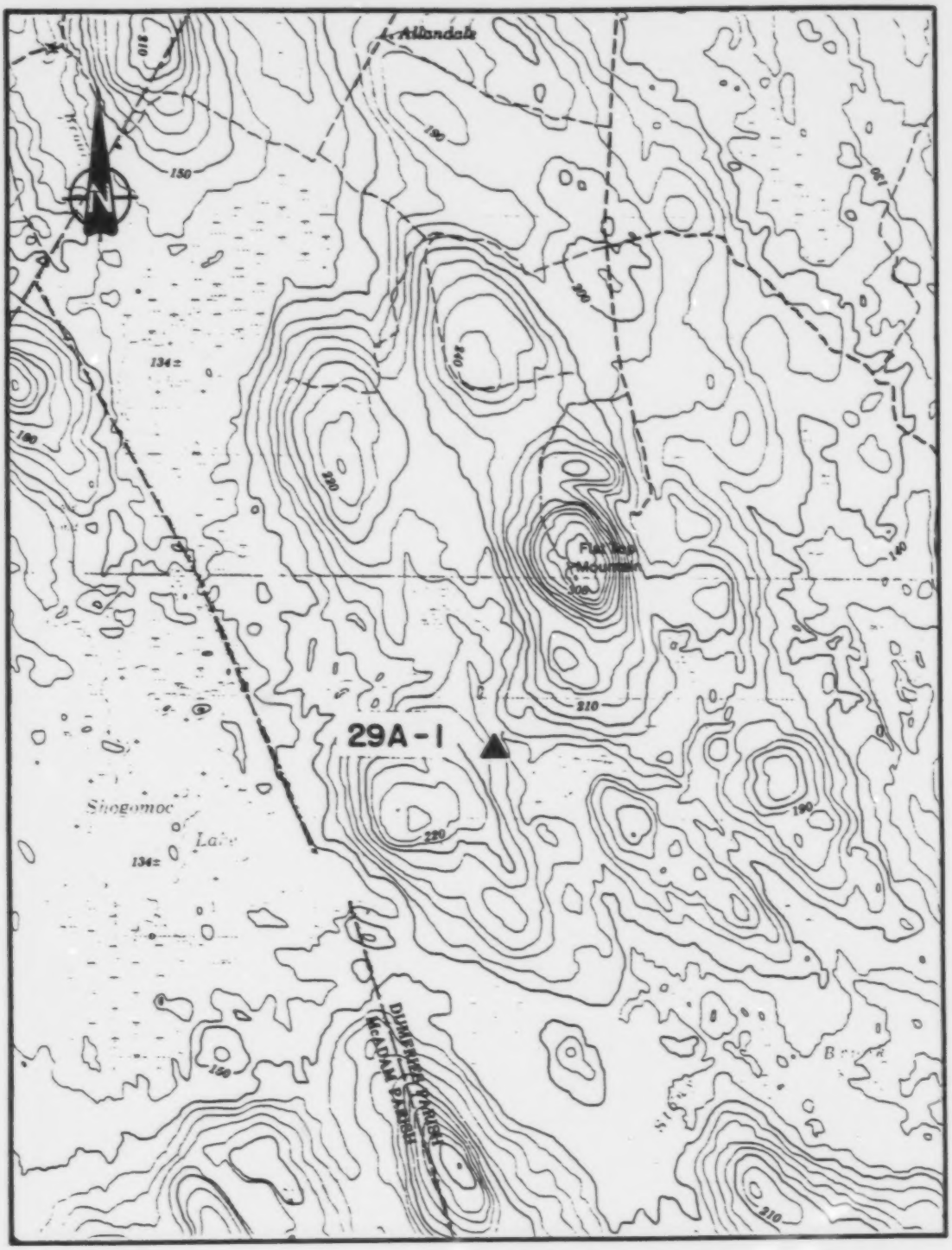


**Figure 17a Site location map for Unit 29a (scale 1:50,000).**

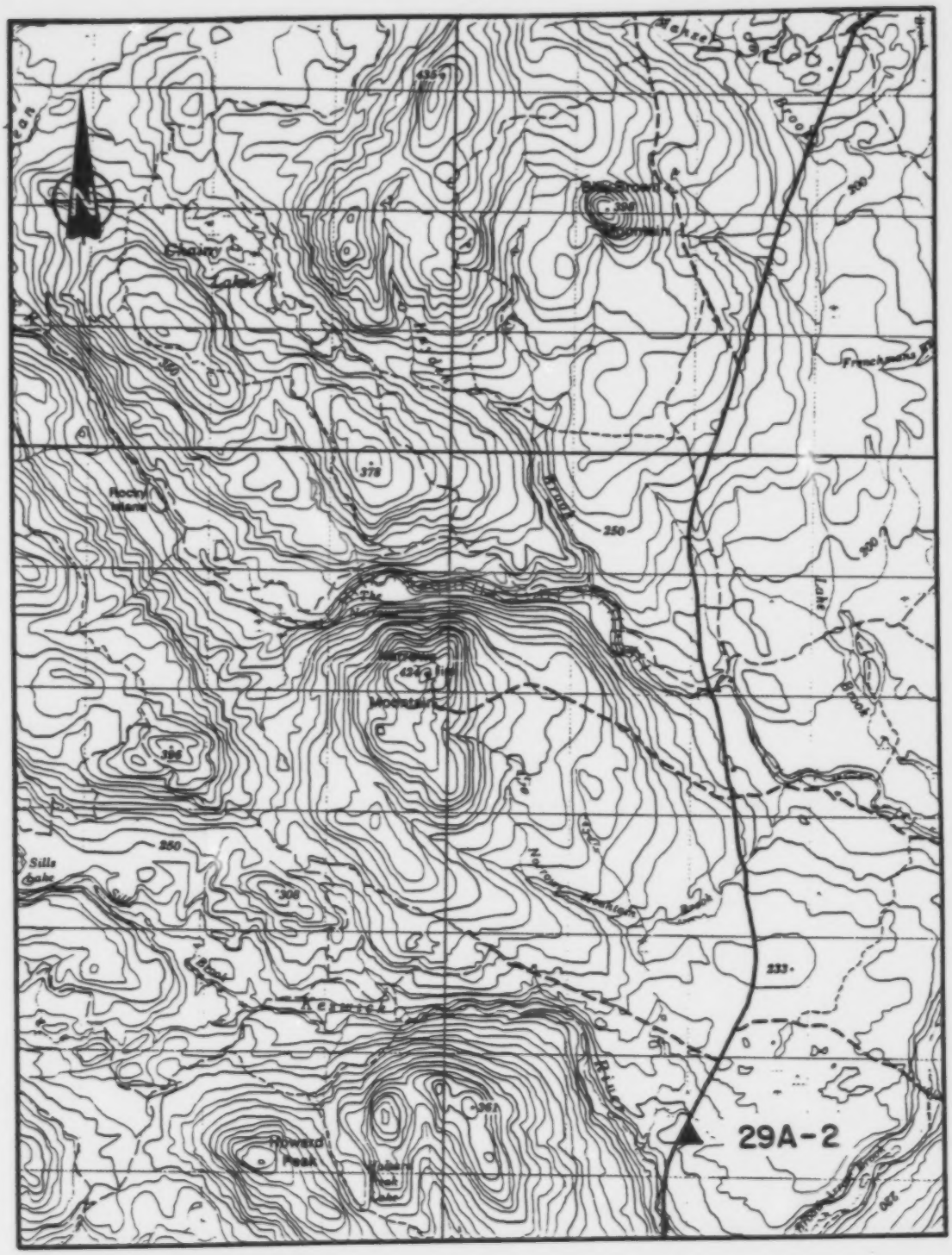


Figure 17b Site location map for Unit 29a (scale 1:50,000).

### 3.1.22 Unit 29(b) Hawkshaw Granodiorite (Cranberry Ridge)

| | |
|---|---|
| COMMODITY: | Granite COLOUR: Grey |
| LOCATION: | Cranberry Ridge (south of Canterbury), 75 km west southwest of Fredericton. |
| N.S.T.: | 21 G/14 and 21 G/11 |
| ACCESS: | Highway 630 south of Canterbury and several logging roads. |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | This unit (Hpg) is a phase of the Hawkshaw Granite occurring along its contact with the Skiff Lake Granite, in the southern portion of Pokiok Batholith. |
| PREVIOUS WORK: | Lutes, 1979, 1987; Anderson and Poole, 1959. |
| GEOLOGY: | The unit consists of grey, coarse-grained, porphyritic to locally equigranular biotite granodiorite that is rarely muscovite-bearing. It generally contains small metasedimentary xenoliths and characteristic small biotite-rich clots. The rock consists of 40-50% plagioclase, 35-40% quartz, 10-15% biotite and 1-10% alkali feldspar. Feldspar phenocrysts (3 to 5 cm long) generally have a preferred orientation parallel to the unit contacts. |
| SITE SUMMARY: | Site 29b-2 comprises an extensive exposure of grey coarse-grained equigranular granodiorite. It is characterized by regular, moderately spaced joints. Large biotite crystals may hinder polishing. |
| SAMPLES: | Polished and honed 29b-2 |
| DEVELOPMENT POTENTIAL: | This unit, like the main phase of the Hawkshaw Granite, has a coarse porphyritic texture with large feldspar phenocrysts. Potential development problems arise from the coarse-grained biotite and the abundance of xenoliths (knots). Large (1 to 7 m) glacial erratics are scattered about the area suggesting potential for large block sizes. |

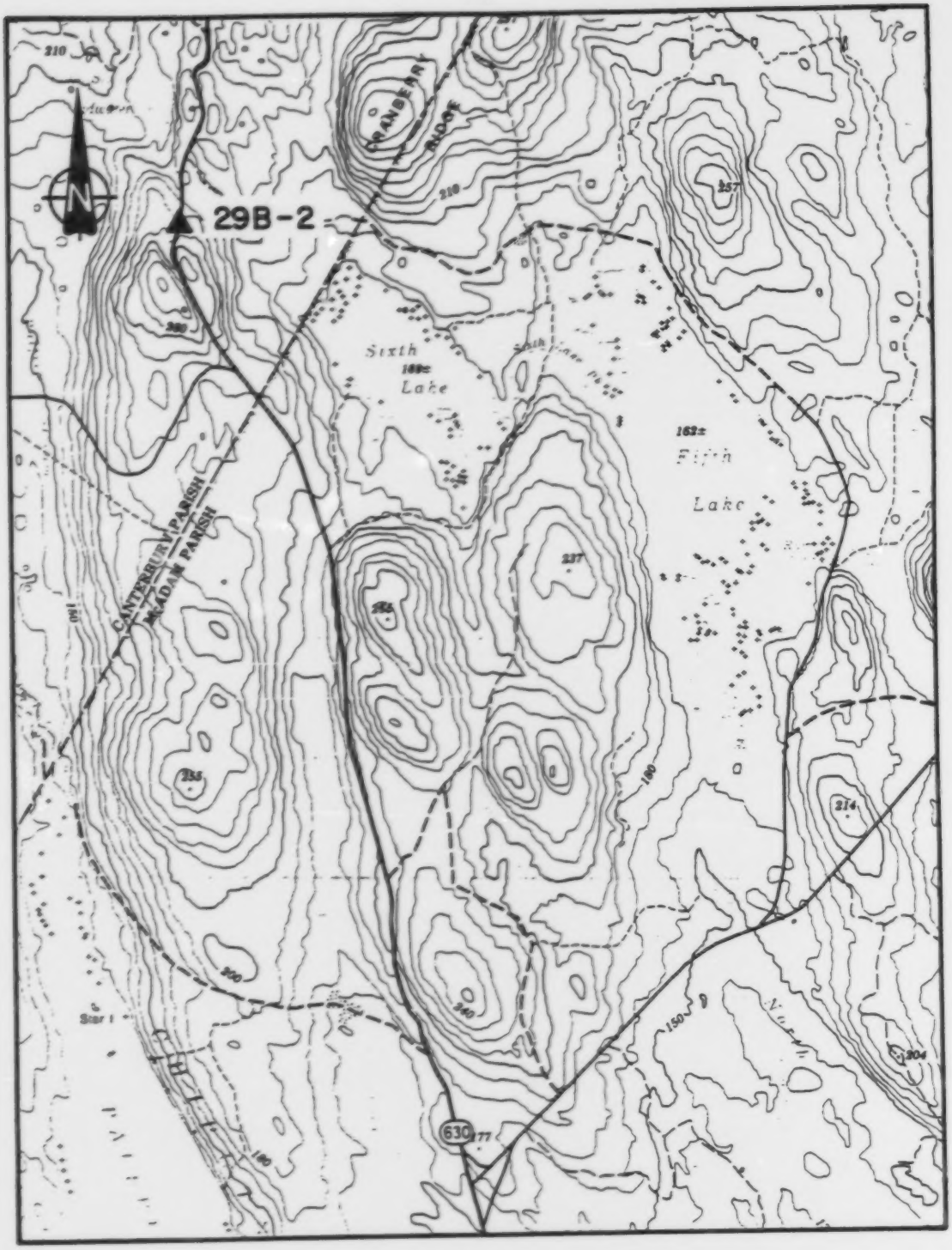


Figure 18 Site location map for Unit 29b (scale 1:50,000).

### 3.1.23 Unit 30a Skiff Lake Biotite Granite

| | |
|---|---|
| COMMODITY: | Granite COLOUR: Pink |
| LOCATION: | East Brook Ridge, (Bolton Lake), northwest of Palfrey Lake, 85 km west southwest of Fredericton. |
| N.S.T.: | 21 G/12, 21G/13, 21G/14 and 21G/11 |
| ACCESS: | Highway 630 south of Canterbury and logging road to the west. |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | This unit (Seb) is one of the five mappable divisions of the Skiff Lake Granite, which comprises the southwestern portion of the Pokiok Batholith. |
| PREVIOUS WORK: | Lutes 1987, 1979; Martin 1970. |
| GEOLOGY: | This unit forms two intrusions; one east and one west of Bolton Lake. In general the rock is pink, equigranular fine- to coarse-grained biotite granite. It contains 20-50% plagioclase, 20-30% alkali feldspar, 30% quartz and 5% biotite. |
| SITE SUMMARY: | Site 30a-1 is located within the eastern intrusion. It has moderately spaced, irregular joints with potential for large blocks. It has a pinkish colour due mainly to pink feldspar phenocrysts in a grey, medium- to coarse-grained matrix. The main development concern for this site is the amount of veining that is present.<br><br>Site 30a-2 is grey in colour and displays widely spaced, regular jointing. It contains minor veining and xenoliths and up to one percent sulphides. |
| SAMPLES: | Polished and honed 30a-1<br>Polished and honed 30a-2 |

**DEVELOPMENT POTENTIAL:**

The unit displays a joint geometry that may support large blocks. There are slight colour and textural variations within different areas of the unit. Local topographical relief could be favourable for quarry development.

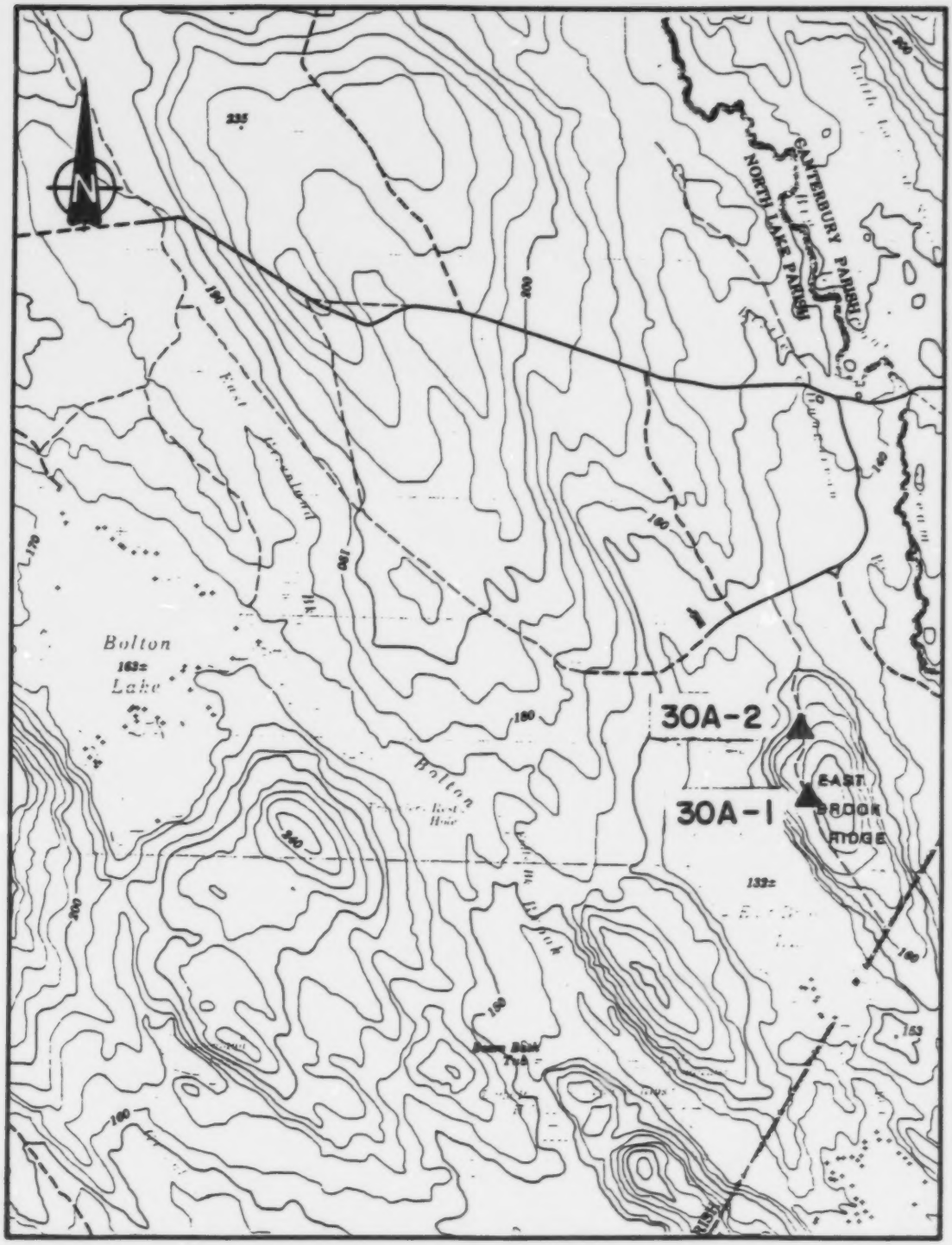


Figure 19 Site location map for Unit 30a (scale 1:50,000).

### 3.1.24 Unit 33 Pleasant Ridge Granite

| | |
|---|---|
| COMMODITY: | Granite COLOUR: Grey |
| LOCATION: | Pleasant Ridge, 30 km northwest of St. George |
| N.T.S.: | 21 G/06, 21 G/07 |
| ACCESS: | Highway 3 and the Flume Ridge road. |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | This unit is one of six granitic plutons ($D_4$) that occur along the northern and western boundaries of the Saint George Batholith. |
| PREVIOUS WORK: | McLeod, 1989; Crocco, 1975; Ruitenberg and Fyffe, 1982. |
| GEOLOGY: | The unit was evaluated on the basis of rubble scattered about a prominent ridge compriseing two distinctly different types of granitic boulders. Near the crest of the ridge are white, medium- to coarse-grained, unaltered muscovite adamellite boulders consisting of 35% quartz, 35% plagioclase, 25% interstitial microcline and 5% muscovite. Near the base of the ridge are porphyritic, light grey, coarse-grained biotite adamellite boulders consisting of 42% K-feldspar, 28% zoned plagioclase, 25% quartz and 7% biotite (Crocco 1975). |
| SITE SUMMARY: | Outcrop was not located. The boulders found were less than two metres in size. |
| SAMPLES: | Rubble sample, not finished 33 |
| DEVELOPMENT POTENTIAL: | Since bedrock exposures could not be located, an assessment of potential is of limited validity. The colour and texture of the unit are believed to have market potential and further evaluation may be warranted. |

### 3.1.25 Unit 37b McDougall Lake Biotite Granite

| | |
|---|---|
| COMMODITY: | Granite COLOUR: Grey |
| LOCATION: | 3 km south of Mount Pleasant, 33 km north of St. George. |
| N.T.S.: | 21 G/07 |
| ACCESS: | Logging roads east and west of the road between the Mount Pleasant mine and Utopia Centre. |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | This unit (South Mount Pleasant Granite) is a subdivision of the McDougall Lake Granodiorite phase ($D_4$) of the St. George Batholith. |
| PREVIOUS WORK: | McLeod, 1989; Gardiner, 1988, 1989. |
| GEOLOGY: | This unit is a grey, medium-grained equigranular biotite/garnet/muscovite granite. |
| SITE SUMMARY: | Site 37b-1 is on the main road southeast of Mount Pleasant. The rock is intensely jointed. It is variable in colour and grain size. Iron staining is prominent on joint faces. |
| SAMPLES: | Hand sample 37b-1<br>Hand sample 37b-2 |
| DEVELOPMENT POTENTIAL: | The rock from this unit was previously identified to have a desirable colour and texture. Evaluation of a limited number of outcrops suggests that intense fracturing and iron-staining would limit the development potential for this unit. |

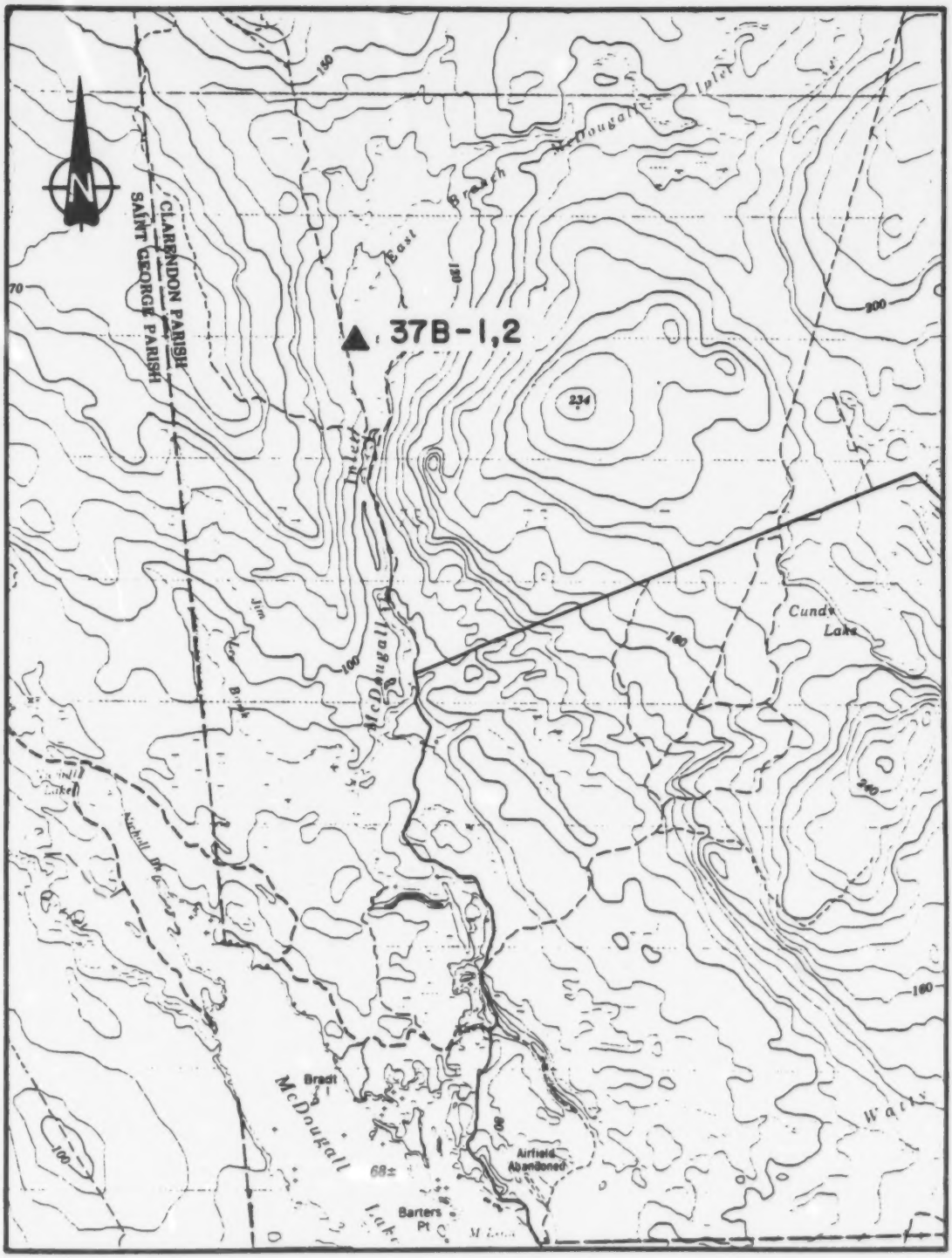


Figure 20 Site location map for Unit 37b (scale 1:50,000).

### 3.1.26 Unit 42 Meridian Brook Granite

COMMODITY: Granite COLOUR: Grey

LOCATION: In Northumberland County, 17 km southwest of Popple Depot, 100 km west northwest of Newcastle.

N.T.S.: 21 O/07

ACCESS: The unit is crossed by the main South Nepisiguit - South Sevogle River Road and numerous logging roads.

DESCRIPTION

GEOLOGICAL SETTING: The area is underlain by granitoid rocks of Ordovician age known as the Meridian Brook Granite (Ogm).

PREVIOUS WORK: The area has most recently been mapped by Whalen (1988). Other workers have mapped the area and are referenced in Whalen (1988).

GEOLOGY: The unit generally is a medium-grained to coarse-grained, variably foliated, equigranular to subporphyritic granite of variable colour. (Crouse, 1979; Whalen, 1987).

The eastern part of this unit, called the Mount Johnson Granite by Whalen (1987), is described as "a reddish brown to grey, fine-grained, strongly foliated granite containing recrystallized quartz and feldspars, clotty biotite, amphibole and opaque aggregates and accessory allanite and zircon. Included in this unit are some exposures of deformed mafic igneous and metasedimentry inclusion-rich granodiorite to tonalite".

Other parts of the unit are orange to pink to beige accompanied by a foliation that is heterogeneously distributed throughout the granite and accentuated by biotite and muscovite (Crouse, 1979; Whalen, 1987).

As described by Crouse (1979) the granite "contains 30-50% polygonal quartz, 30-40% potassium feldspar (locally perthitic), 2-15% plagioclase feldspar, 10-30% muscovite and biotite, 1-5% epidote and minor garnet and sphene".

SITE SUMMARY:

Site 42-1 is located in the eastern part of the unit and comprises an orange-brown, medium-grained, equigranular granite, with no outcrop inhomogeneities. The rock displays a foliation accentuated by biotite. Joints are found in a regular pattern (spaced at less than 20 cm apart). Sheeting was found at surface with a spacing of 0.5 m. Deleterious minerals or other imperfections were not observed.

Site 42-2 is located in the western part of the unit and is representative of several outcrop locations over several hundred metres along a bush road. Three samples were collected from this area. All are medium- to coarse-grained and equigranular. There is variation in colour from orange to pink and white to grey. The severity of foliation ranges from absent to pervasive. Due to the nature of the probable outcrop, data was not obtained for fabric and jointing orientation, however the rock fractured into blocks approximately 20 cm in size. The eastern-most edge of this site is intruded by a gabbroic dyke, and there are scattered quartz veins present.

SAMPLE:

Hand sample 42-1
Hand sample 42-2a
Hand sample 42-2b
Hand sample 42-2c

DEVELOPMENT POTENTIAL:

This unit has limited potential, primarily due to the variations in severity of foliation, variations in the angular relationships between foliation and jointing, the intensity of jointing, and variations in colour. The presence of "clotty biotite" as described by Whalen (1987) in the eastern part of the unit may present a problem for polishing the stone.

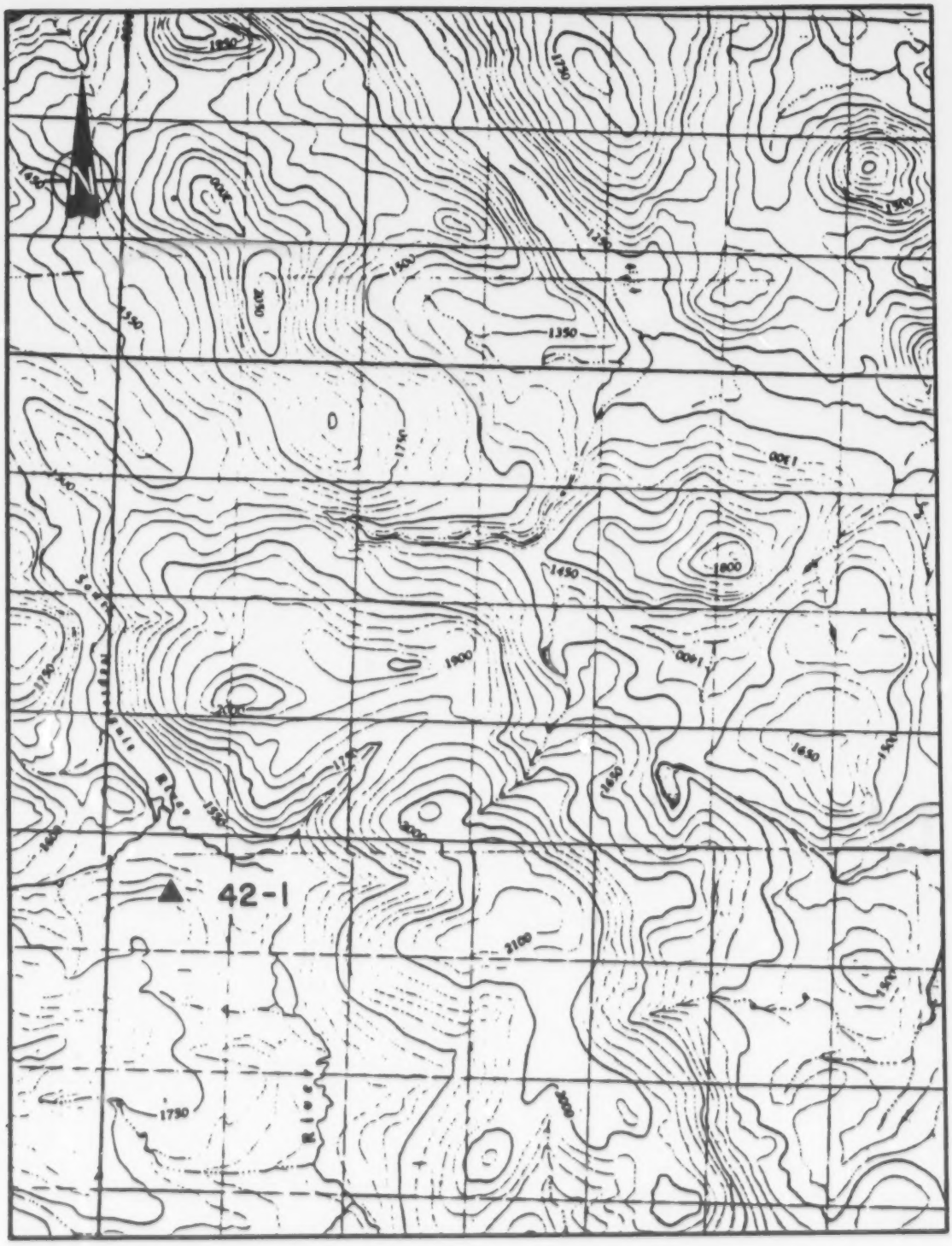


Figure 21a Site location map for Unit 42 (scale 1:50,000).

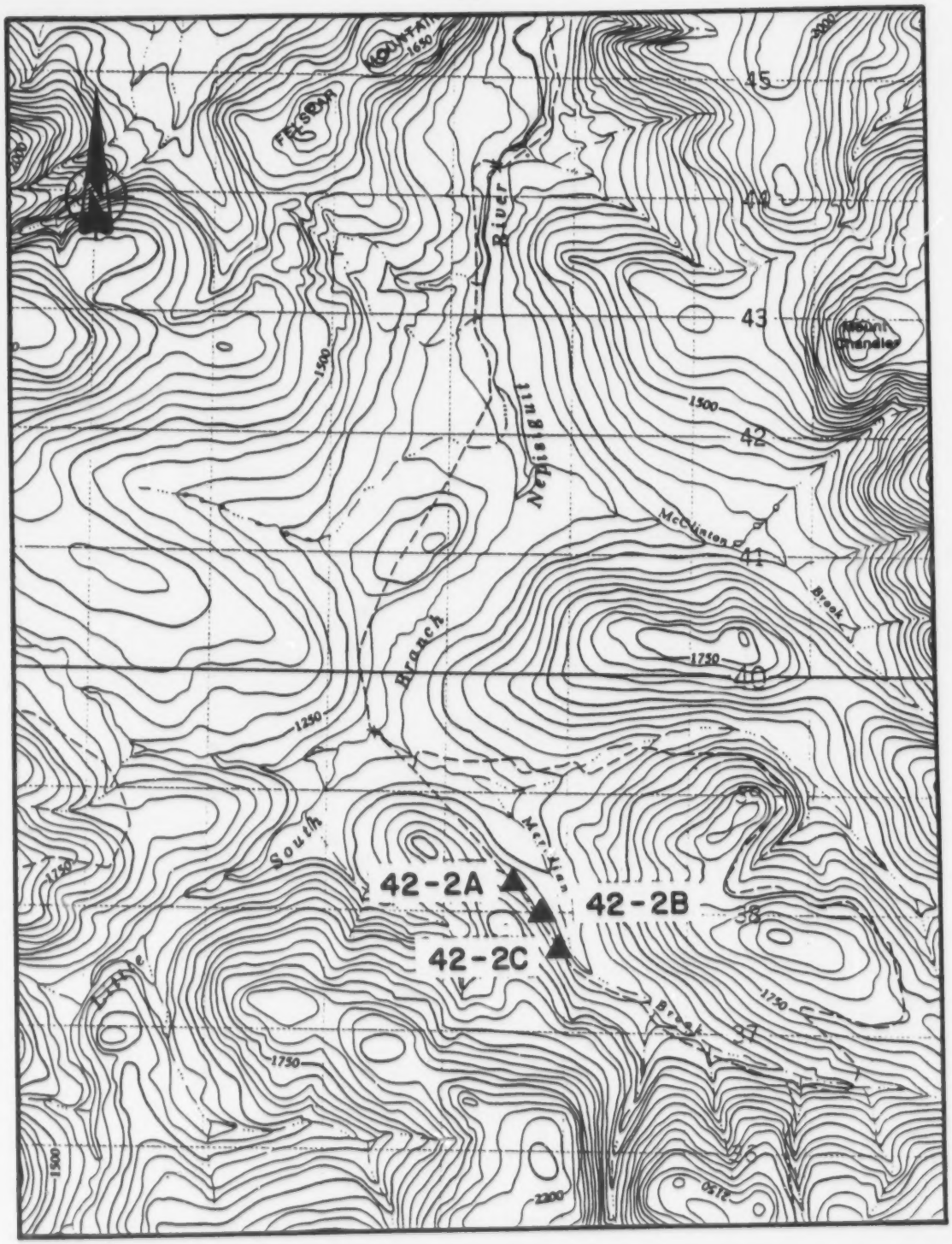


Figure 21b Site location map for Unit 42 (scale 1:50,000).

### 3.1.27 Unit 43 Sweat Hill Granite

COMMODITY: Foliated Granite COLOUR: Grey

LOCATION: Freeze Lakes, 80 km west northwest of Newcastle.

N.T.S.: 21 O/02 and 21 O/07

ACCESS: Highway 430, major haul road from Popple Depot or South Sevogle River and secondary logging roads.

DESCRIPTION

GEOLOGICAL SETTING: This unit (Ogs) is one of the Ordovician foliated granitic plutons that lie within the north-central part of the Miramichi Anticlinorium.

PREVIOUS WORK: Whalen 1987, 1988; Crouse 1979.

GEOLOGY: The Sweat Hill Granite is light grey to pink, foliated, coarse-grained and subporphyritic, with large feldspar phenocrysts. A gradational change from a nearly massive coarse-grained granite to a chloritic feldspar-augen schist occurs along a 5 km north-south road transecting the eastern end of the pluton. The average mineral composition is 30-40% quartz, 30-50% microcline, 5-20% muscovite and biotite with 5-10% plagioclase feldspar.

SITE SUMMARY: Site 43-1 is in the northern portion of the pluton. The rock is pinkish grey, coarse-grained, foliated, and has regular, widely spaced joints. The foliation is not parallel to jointing which could potentially increase the waste-to-product ratio during quarrying. The area has numerous large boulders.

Site 43-2 is on the southern side of the pluton. The rock is moderate to strongly foliated. It is dark grey to blackish, schistose with feldspar phenocrysts. The jointing is regular and moderately spaced. Foliation is not parallel to jointing. The rock tends to

split along foliation. The rock is locally iron stained due to sulphide mineralization.

SAMPLES:

Polished and honed 43-1
Polished and honed 43-2

DEVELOPMENT POTENTIAL:

The eastern and southern portions of the pluton are topographically low with abundant wetland. A prominent ridge runs east-west near the northern boundary. The rock from the northern section may have some potential due to anticipated large block sizes and textural uniqueness. The western portion of the pluton was not fully evaluated. In areas where the foliation closely parallels the joint pattern, the waste factor would be expected to be lower resulting in a higher potential for development.

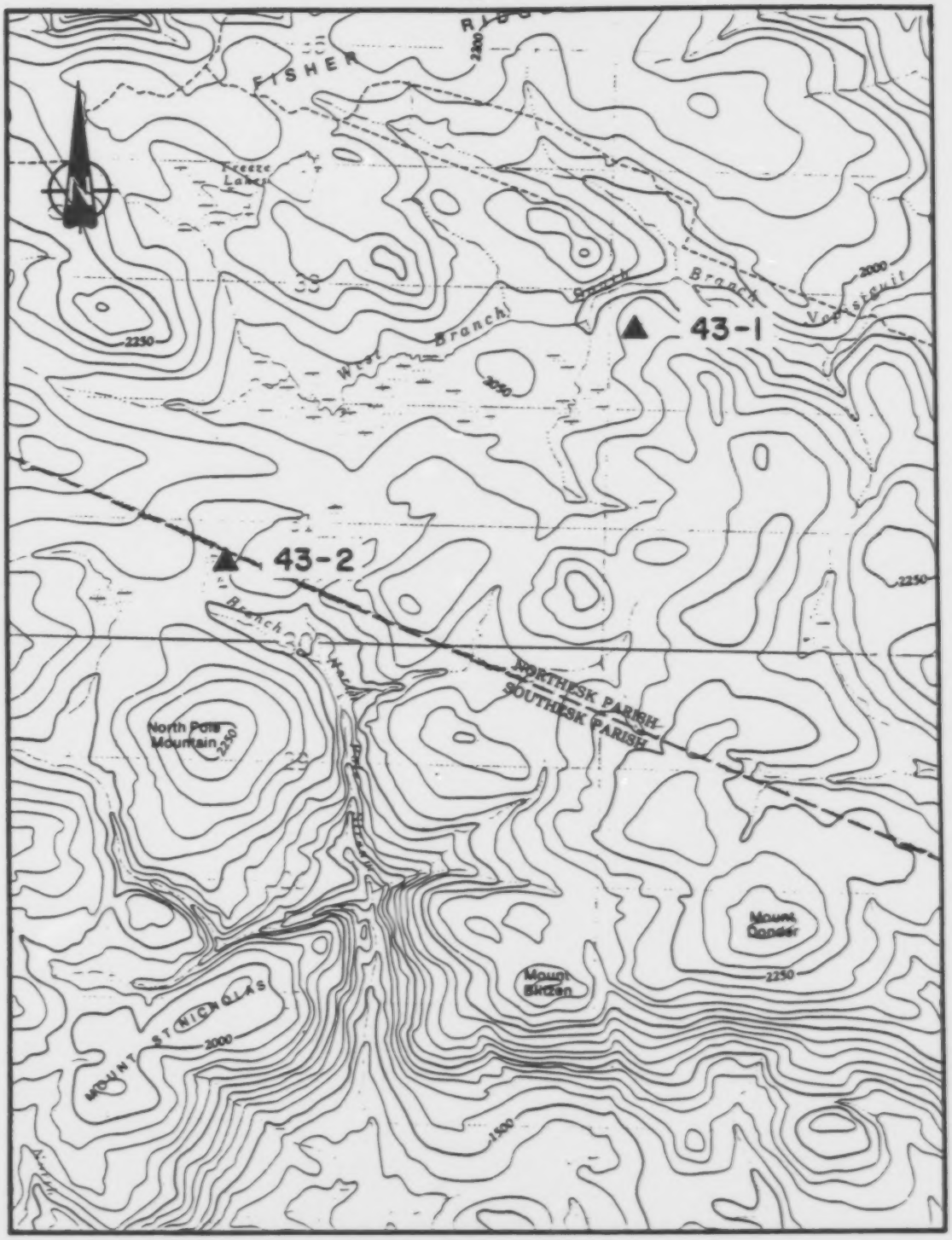


Figure 22 Site location map for Unit 43 (scale 1:50,000).

### 3.1.28 Unit 44 Heath Steele Granite

| | |
|---|---|
| COMMODITY: | Granite COLOUR: Pink |
| LOCATION: | South Little River Lake, 50 km northwest of Newcastle. |
| N.T.S.: | 21 O/01 and 21 O/08 |
| ACCESS: | Highway 430, Repap-Miramichi haulage road and secondary logging roads just north of the Heath Steele mine site. |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | This unit (Ogh) is one of several foliated Ordovician granitic plutons situated within the Miramichi Anticlinorium. |
| PREVIOUS WORK: | Irrinki 1971, 1982, 1986. |
| GEOLOGY: | The rock from this unit is a light grey to light pink, medium- to coarse-grained, equigranular to subporphyritic, massive to well foliated granite. |
| SITE SUMMARY: | Site 44-1 is southwest of South Little River Lake. The rock at this site is orangish, medium- grained, and equigranular with a strong foliation. Jointing is irregular with a moderate spacing. Outcrop displays intense quartz veining. |
| SAMPLES: | Polished and honed 44-1 |
| DEVELOPMENT POTENTIAL: | The observed outcrop suggests the unit has limited potential for dimension stone. For the most part the rock is intensely fractured and/or jointed. It has been subjected to injection of numerous quartz veins and is locally iron stained. |

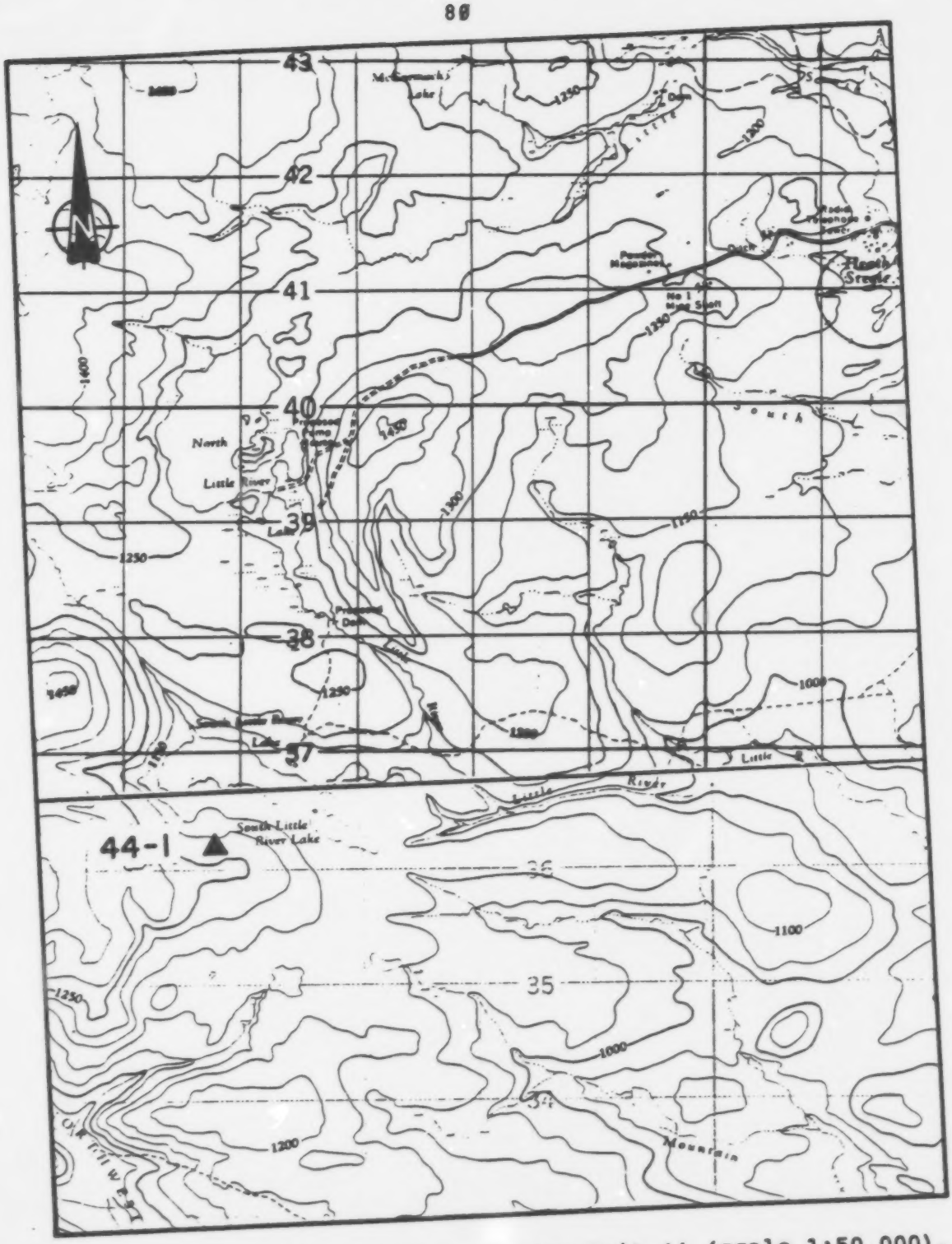


Figure 23 Site location map for Unit 44 (scale 1:50,000).

## 3.1.29 Unit 46 Mullin Stream Lake Granite

COMMODITY: Granite COLOUR: Pink to orange

LOCATION: Mullin Stream Lake, approximately 55 km west of Newcastle.

N.T.S.: 21 O/1

ACCESS: Primarily by the road from Sunny Corner to Mullin Stream Lake, or on a secondary logging road passing to the east of Mullin Stream Lake.

DESCRIPTION

GEOLOGICAL SETTING: The area is underlain by rocks of the Ordovician Mullin Stream Lake Granite (Ogu) which forms a long (30 km) bowl-shaped unit parallel to the regional structure.

PREVIOUS WORK: The area was most recently mapped by Whalen (1988) and Irrinki (1986).

GEOLOGY: The Mullin Stream Lake Granite is a pink to orange, medium- to coarse-grained, weakly to strongly foliated biotite - muscovite granite (Whalen, 1987).

SITE SUMMARY: Site 46-1 is a topographic high associated with numerous boulders of white, foliated granite. The foliation is accentuated by the alignment of micas. Quartz veins and joints are abundant and closely spaced.

At Site 46-2 orange, foliated, granitic boulders were abundant. The orange granite also occurred in outcrop several hundred metres away. Within the outcrop, colour variations from orange to white to grey are common. Quartz veins and fracturing frequently occurred.

SAMPLES: Hand sample 46-1
Hand sample 46-2

**DEVELOPMENT POTENTIAL:**

The unit appears to be highly variable with regard to colour, and severity of foliation. Quartz veining and spacing of joints are unpredictable. Potential is regarded as low.

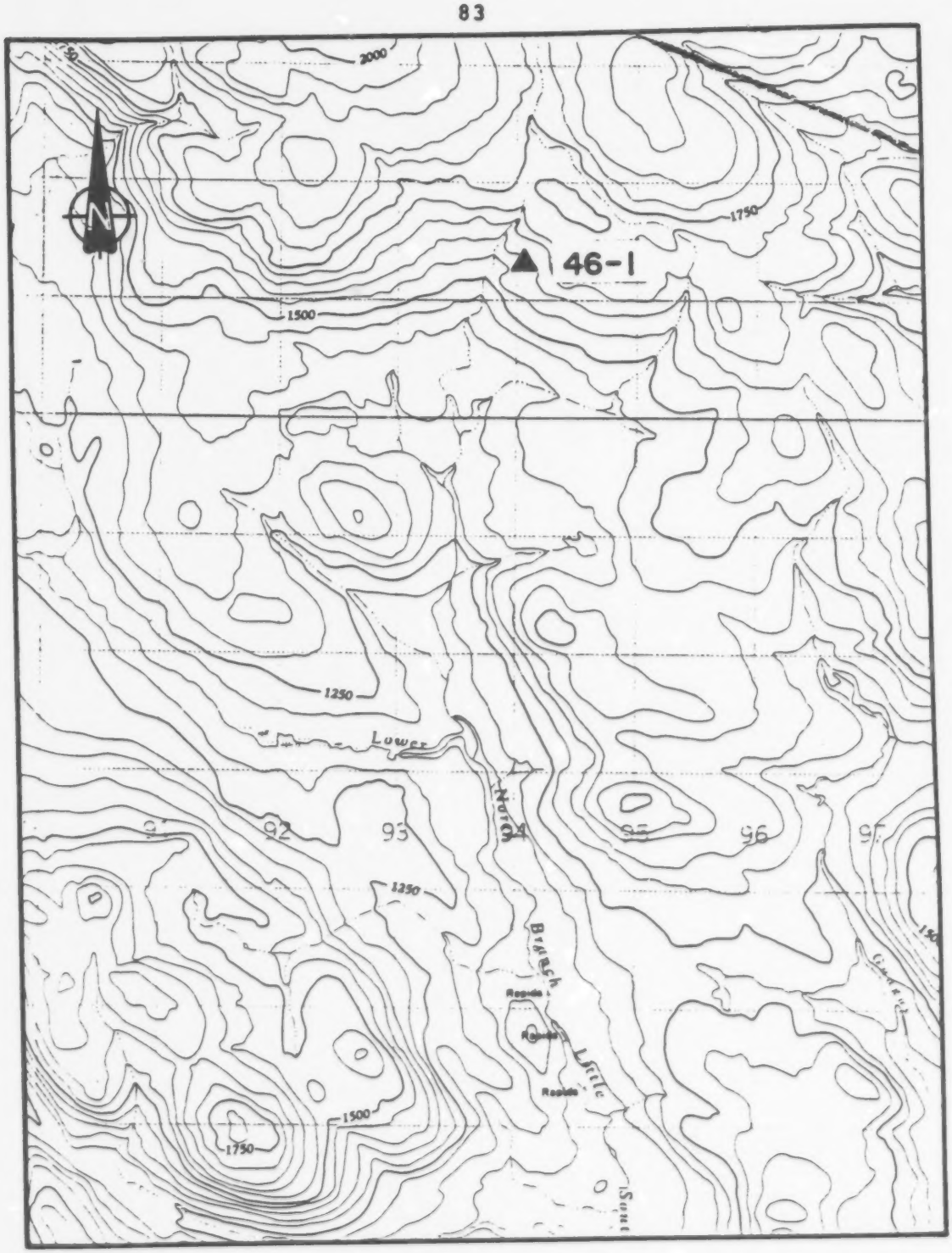


Figure 24a Site location map for Unit 46 (scale 1:50,000).

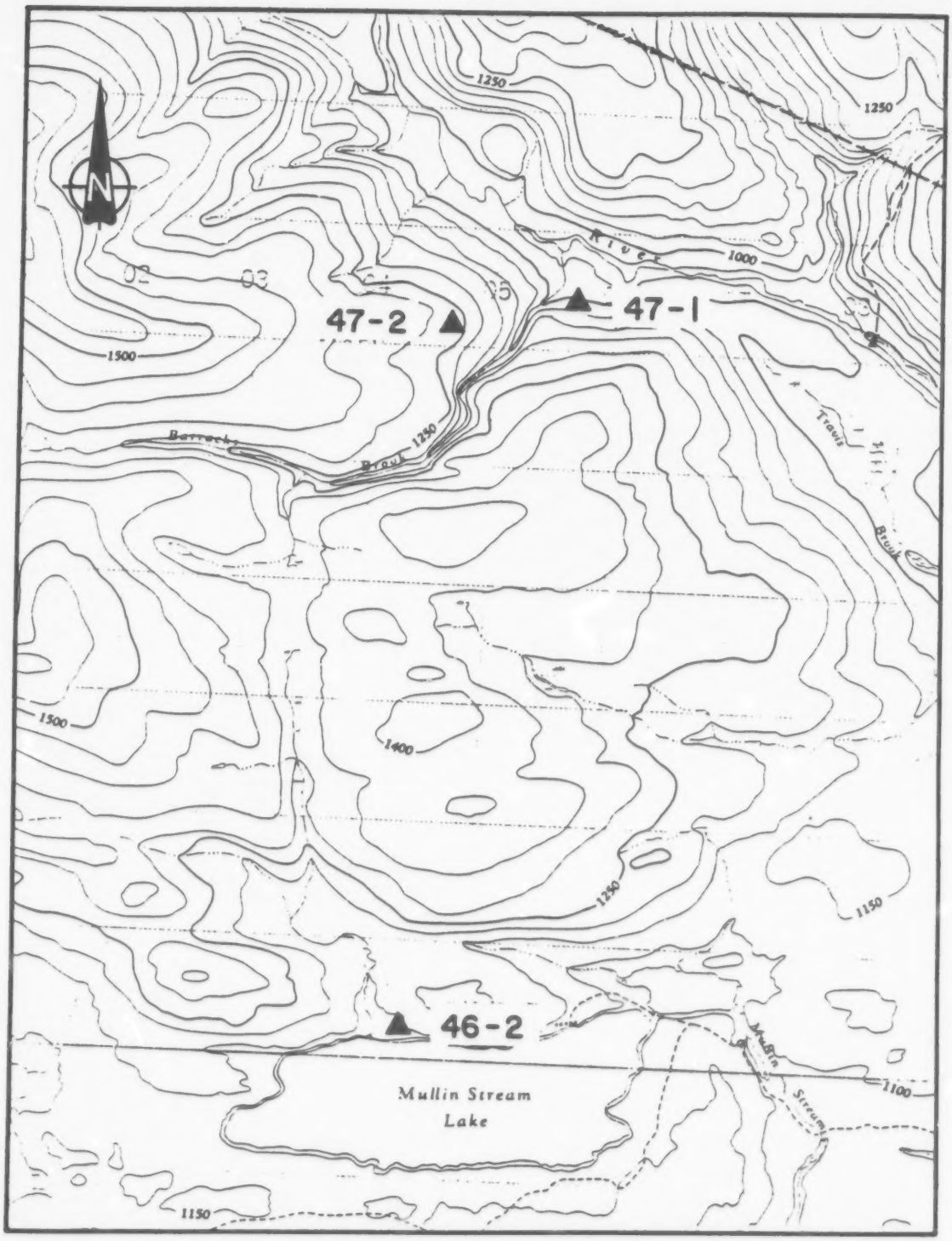


Figure 24b Site location map for Unit 46 (scale 1:50,000).

## 3.1.30 Unit 47 Undivided Deformed Ordovician Granites

COMMODITY: Granite COLOUR: Grey

LOCATION: 53 km west of Newcastle.

N.T.S.: 21 O/1

ACCESS: The unit is crossed by the main south Nepisiguit - South Sevogle road.

DESCRIPTION

GEOLOGICAL SETTING: The area is underlain by undivided deformed granitic rocks (Og) of an Ordovician age, which are similar to the Mullin Stream Lake granite.

PREVIOUS WORK: The area was most recently mapped by Whalen (1988) and Irrinki (1986).

GEOLOGY: This unit is one of a number of older granitic intrusions, all of which are variably deformed but tend to have a prominent regional foliation marked by the alignment of platy minerals (Irrinki, 1986; Whalen, 1988).

SITE SUMMARY: Site 47-1 is primarily a medium-grained, equigranular, grey granite with variable intensities of foliation. The rock tends to weather a rusty colour. Joints are regularly spaced in groups up to 1.5 m apart. Some joint faces are iron-stained. Quartz veins (approximately 2 cm wide) occur at spacings of greater than 1.5 m. However, their distribution, width and orientation are variable.

Site 47-2 comprises a medium-grained equigranular foliated granite of variable colour ranging from grey to orange. Iron-staining resulting from weathering covers most of the outcrop. Sparse xenoliths (up to 0.5 m in size), and veins 1-5 cm wide at a spacing of less than 2 m were observed at this site. Joints are spaced at 0.5 m.

SAMPLES: Hand sample 47-1
Hand sample 47-2

DEVELOPMENT POTENTIAL: The western portion of the unit was field checked but outcrop was not located. The remainder has notable local variations in colour. The potential is rated as low due to the closely spaced joints, the presence of sulphides, and inconsistencies in the size and orientation of veins and xenoliths.

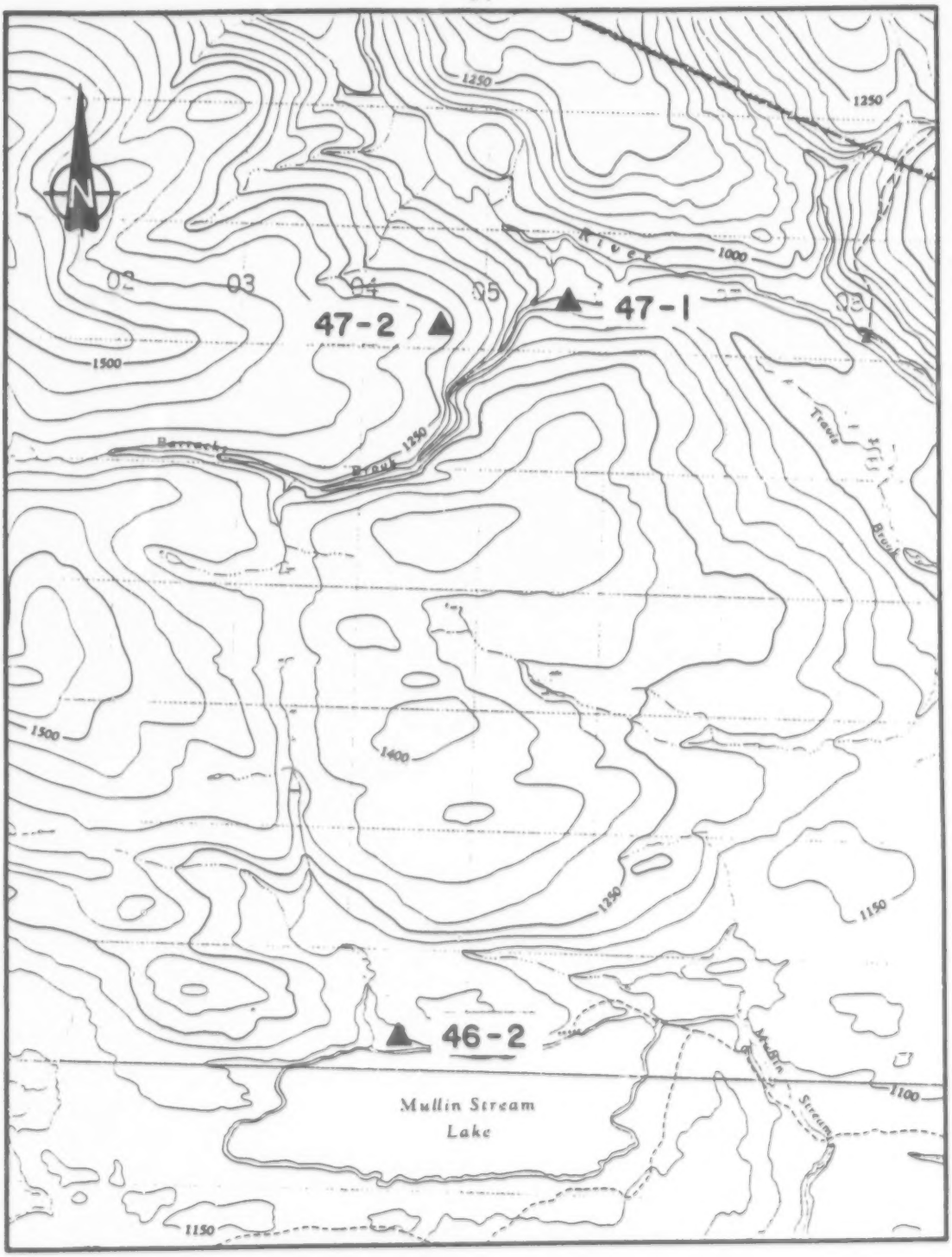


Figure 25 Site location map for Unit 47 (scale 1:50,000).

### 3.1.31 Unit 48 Fox Ridge Granite

COMMODITY: Foliated Granite COLOUR: Pink

LOCATION: 3 km west of Moccasin Lake, 98 km west of Newcastle.

N.T.S.: 21 O/2 and 21 J/15

ACCESS: Logging road off of Repap-Miramichi haul road, 53 km from Highway 108 at McGraw Brook.

DESCRIPTION

GEOLOGICAL SETTING: This unit (Ogf) is one of several of Ordovician granites in the area that have been subjected to several periods of deformation resulting in various degrees of foliation.

PREVIOUS WORK: Whalen 1987,1988; Fyffe et. al. 1981; Fyffe and Pronk 1985.

GEOLOGY: "This biotite-muscovite granite is characterized by feldspar augen up to 4 cm in diameter that commonly exhibit rapakivi mantling" (feldspar zoning) Whalen 1988.

SITE SUMMARY: Site 48-1 is located 3 km due west of Moccasin Lake. The rock is pinkish grey and has a coarse-grained porphyritic texture. It is moderately to strongly foliated. It has regular, widely spaced joints which could result in a potential block size of 4 X 5 X 1.5 m. The site displayed a moderate amount of xenoliths and minor quartz veins.

Site 48-2 is located about 1 km northwest of Site 48-1. At this location the rock is strongly foliated. Jointing is irregular and intense. It has a darker colour and is medium-grained.

Site 48-3 is located 2 km southwest of Island Lake on a Fraser Inc. Road. The rock at this site is much darker than at the other sites evaluated. The outcrop

is intensely jointed with slickensides developed on several surfaces. Phenocrysts at this site are rounded and pink in colour.

SAMPLES:

Polished and honed 48-1
Polished and honed 48-2
Hand sample 48-3

DEVELOPMENT POTENTIAL:

The rock from this unit varies considerably in colour and degree of jointing from site to site. Site 48-1 has the best potential of those evaluated. However the possibility for large blocks (4 X 5 X 2 m) is in part offset by the occurrence of xenoliths, minor veining, and foliation not parallel to jointing.

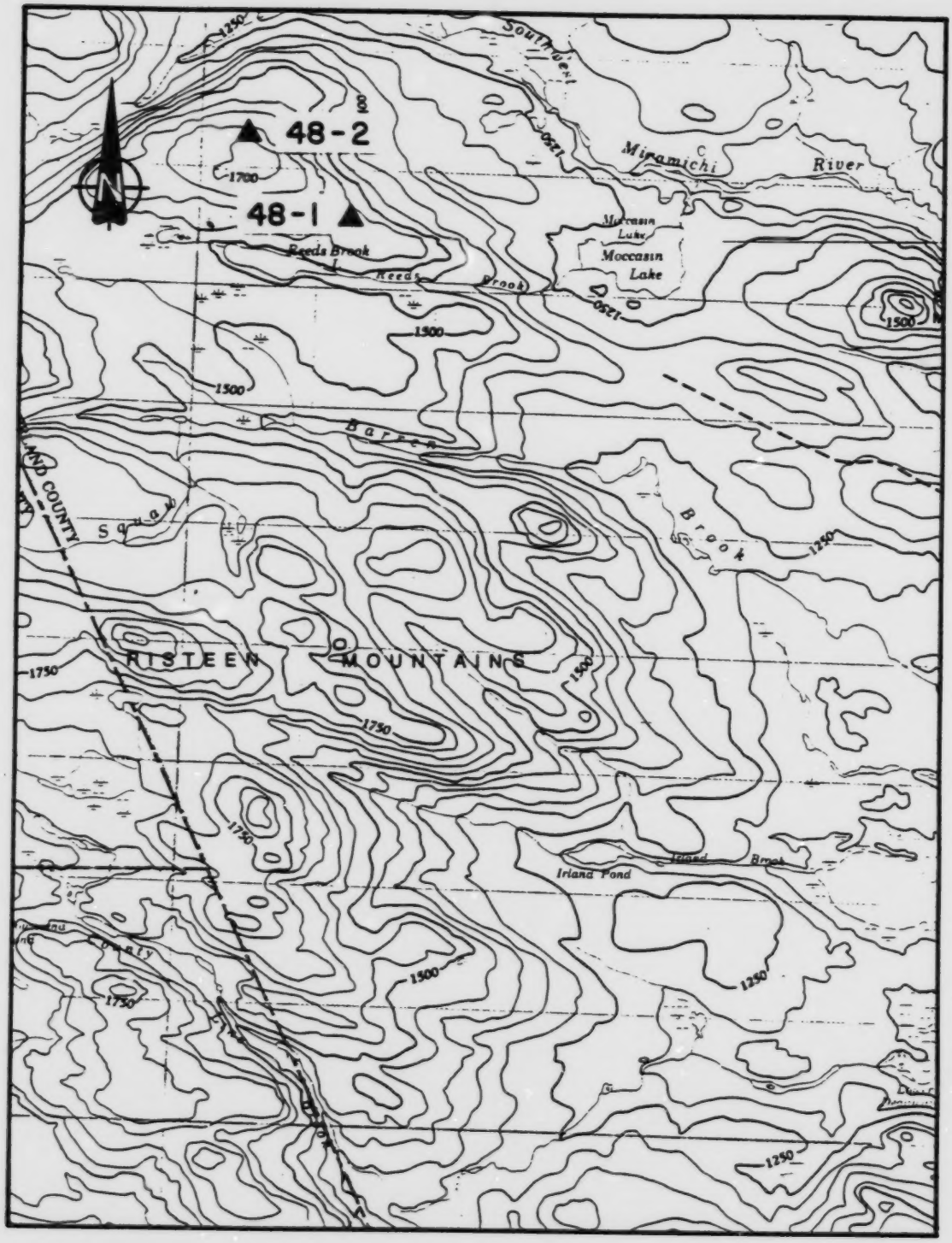


Figure 26a Site location map for Unit 48 (scale 1:50,000).

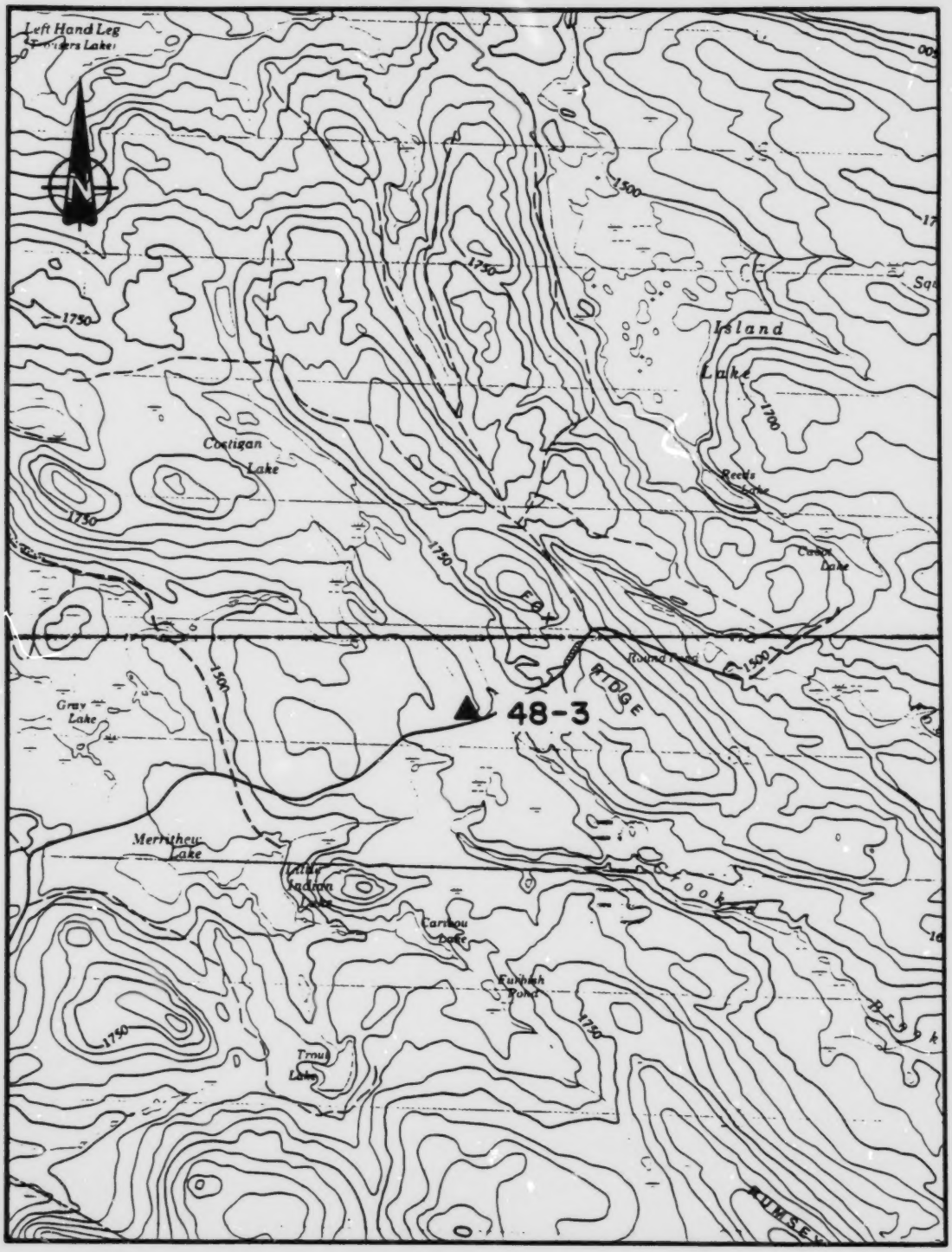


Figure 26b Site location map for Unit 48 (scale 1:50,000).

### 3.1.32 Unit 49 South Renous River Granite

COMMODITY: Granite COLOUR: Grey

LOCATION: Kennedy Lake area, 55 km west of Renous.

N.T.S.: 21 J/15 and 21 J/16

ACCESS: Highway 108 (Renous-Plaster Rock Highway) and several logging roads to the north, mainly the Burke Lake Road.

DESCRIPTION

GEOLOGICAL SETTING: This unit lies within the Miramichi Anticlinorium. This foliated Ordovician granite (Ogr) has intruded the Cambrian-Ordovician paragneiss, schists and metasediments.

PREVIOUS WORK: Irrinki, 1980.

GEOLOGY: The South Renous River Granite consists of pink to red, medium- to coarse-grained, equigranular to porphyritic, weakly to well foliated granite. It commonly displays zoned feldspars (0.4 to 5 cm long pink feldspar crystals mantled by plagioclase). The granite comprises 25 to 45% quartz, 20-40% alkali feldspar, 15-40% plagioclase and 5 to 15% biotite. The granite displays a prominent foliation near the margins of the pluton. The central part of the pluton and its northern margin are more massive.

SITE SUMMARY: Site 49-1 is located east of the South Renous River between Second Fowler Lake and Highway 108 in the eastern section of the pluton. The pluton is bounded to the north and south by east-west trending faults, which account for the intense fracturing observed near the margins. The rock is green-grey, fine-grained, locally porphyritic, and has a yellowish staining. Jointing is irregular and moderately spaced.

Site 49-2 is located on the east side of Louis Lake near the western margin of

the pluton. At this site the rock is grey, medium-grained and porphyritic with a moderate to strongly developed foliation. Jointing is irregular and moderately spaced. Minor alteration occurs along joint faces. The intensity of the foliation decreases to the east.

Site 49-3 is located mid-way between Louis Lake and Burke Lake. The granite at this site is pinkish-green, medium-grained and locally porphyritic. Phenocrysts vary between 0.5 and 2.5 cm. Foliation was not observed at this location. It has widely spaced regular joints. The rock has 5-10% biotite. The exposure extends discontinuously over a length of 500 metres with only minor textural and colour variations noted.

Site 49-4 is near the southwest side of Burke Lake. It is very similar to Site 49-3 with only minor variations. One difference of note is moderate numbers of small (3 cm) xenoliths throughout the exposure.

SAMPLES:

Hand sample 49-1
Polished and honed 49-2
Polished and honed 49-3
Polished and honed 49-4

DEVELOPMENT POTENTIAL:

This unit displays varying colour and textural differences. There is potential for large block sizes in some areas. The foliated zones enhance the market potential rather than detract from it. Much of the unit has limited access and was not evaluated but may also contain rock of equivalent or higher quality.

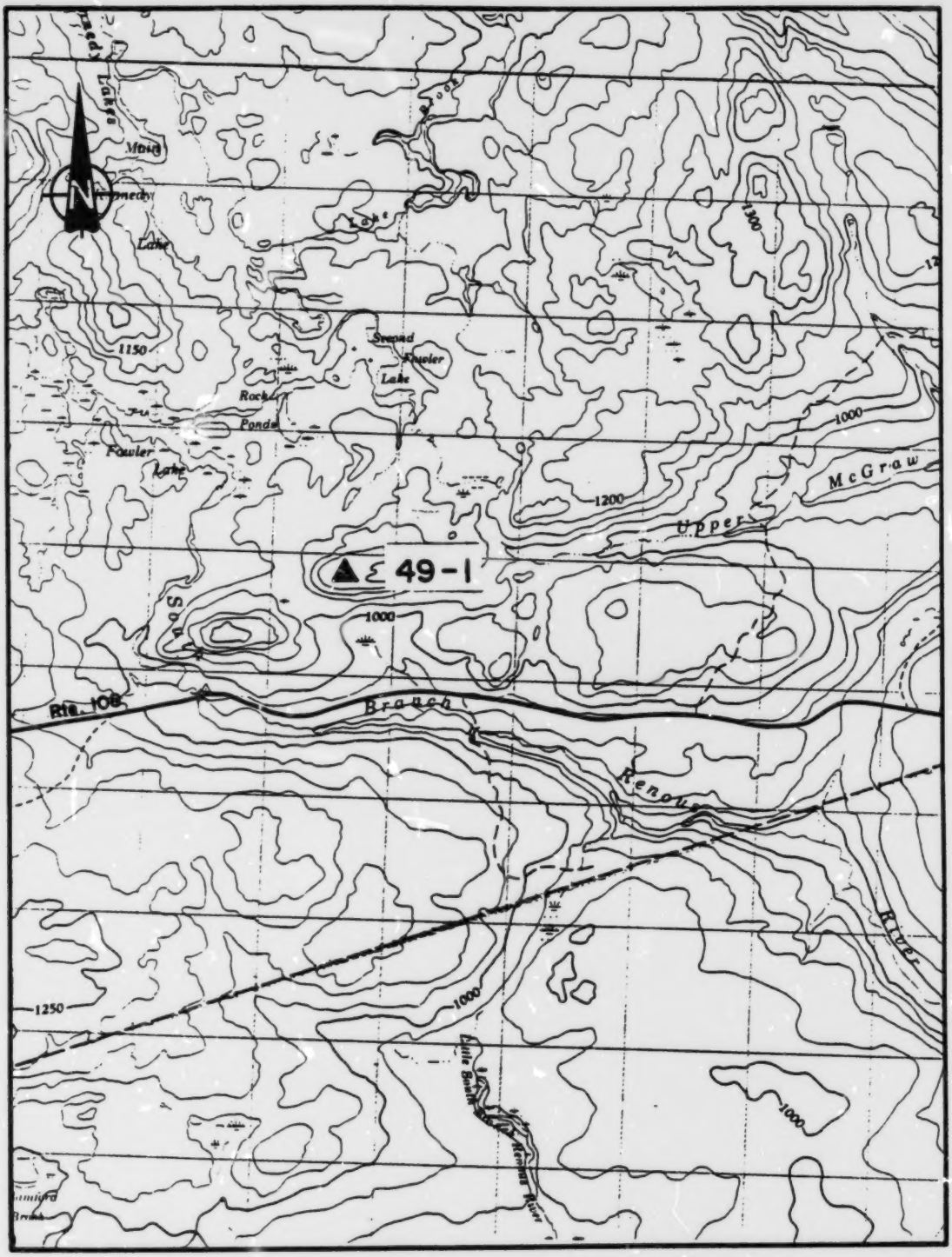


Figure 27a Site location map for Unit 49 (scale 1:50,000).

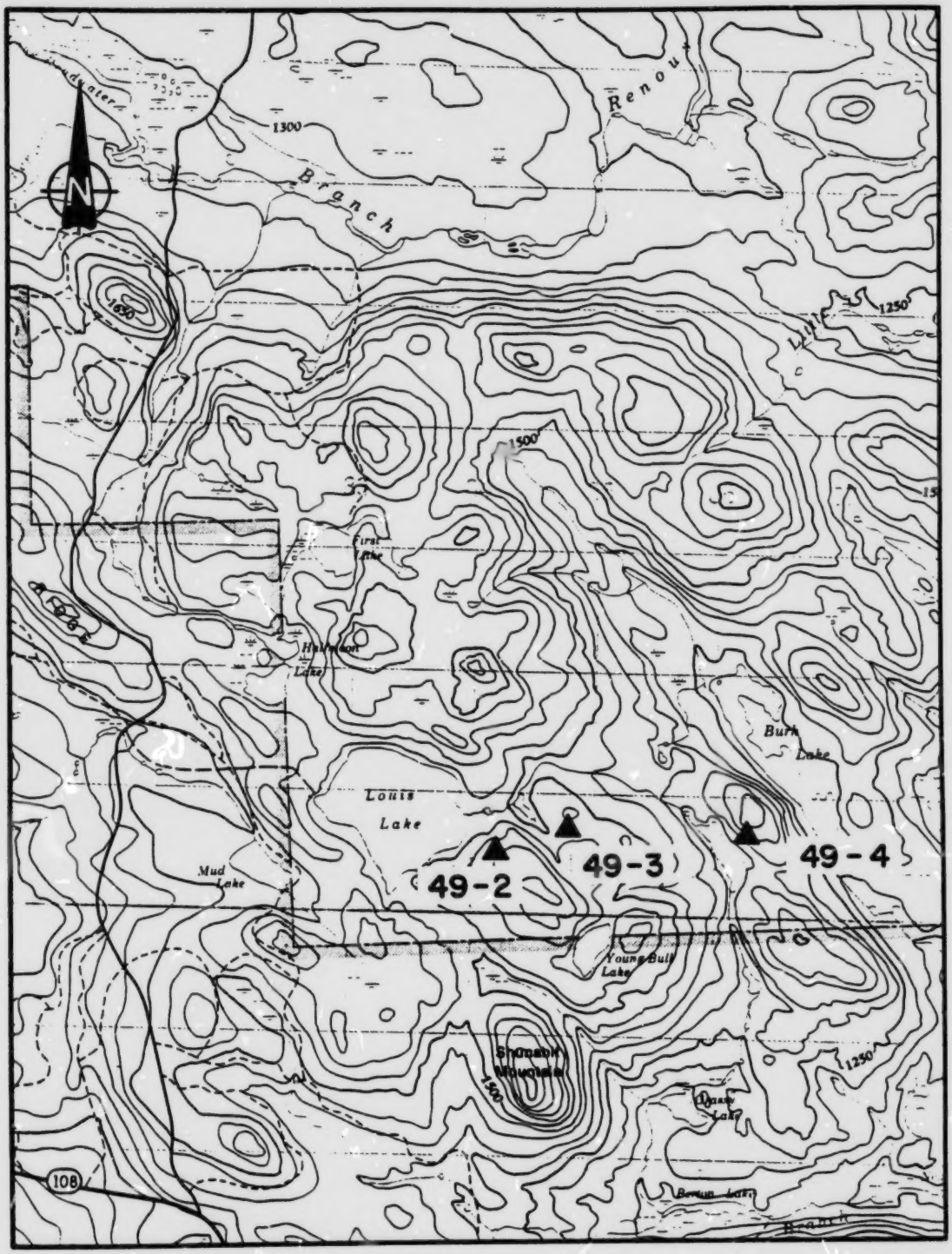


Figure 27b Site location map for Unit 49 (scale 1:50,000).

### 3.1.33 Unit 50 Moose Lake Tonalite

| | |
|---|---|
| COMMODITY: | Gneiss (variegated granite) COLOUR: Grey |
| LOCATION: | 70 km west of Renous. |
| N.T.S.: | 21 J/15 |
| ACCESS: | The Plaster Rock - Renous Road (Highway 108). |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | The area is underlain by high grade metamorphic paragneisses of a Cambro-Ordovician migmatite complex in the Miramichi Anticlinorium. |
| PREVIOUS WORK: | A geological compilation of the area was undertaken by Fyffe (1982), but more detailed geology is provided by Irrinki (1978). |
| GEOLOGY: | In general, the rock is light grey to dark grey and fine- to medium-grained. It comprises a paragneiss exhibiting 2-10 mm thick, alternating light and dark bands. Compositionally it contains primarily quartz, biotite, muscovite and plagioclase (Irrinki, 1978). A dark grey biotite schist is occasionally interlayered with the paragneiss. |
| SITE SUMMARY: | At Site 50-1 the unit consists of dark grey to black biotite-rich bands alternating with narrower light grey to white quartz-feldspar bands. The bands tend to be folded in an irregular manner.<br><br>Joints at 112/90 and 008/50 to 90° are slickensided. A horizontal sheeting is evident with a spacing of less than 0.5 metres.<br><br>Weathered sulphides impart a rusty staining to the rock. |
| SAMPLES: | Hand sample 50-1 |

**DEVELOPMENT POTENTIAL:**

The inability to locate outcrops with large block sizes suggests a low development potential. The presence of sulphides and the inconsistencies of the gneissic layering may also detract from the aesthetic appeal of the stone for some applications.

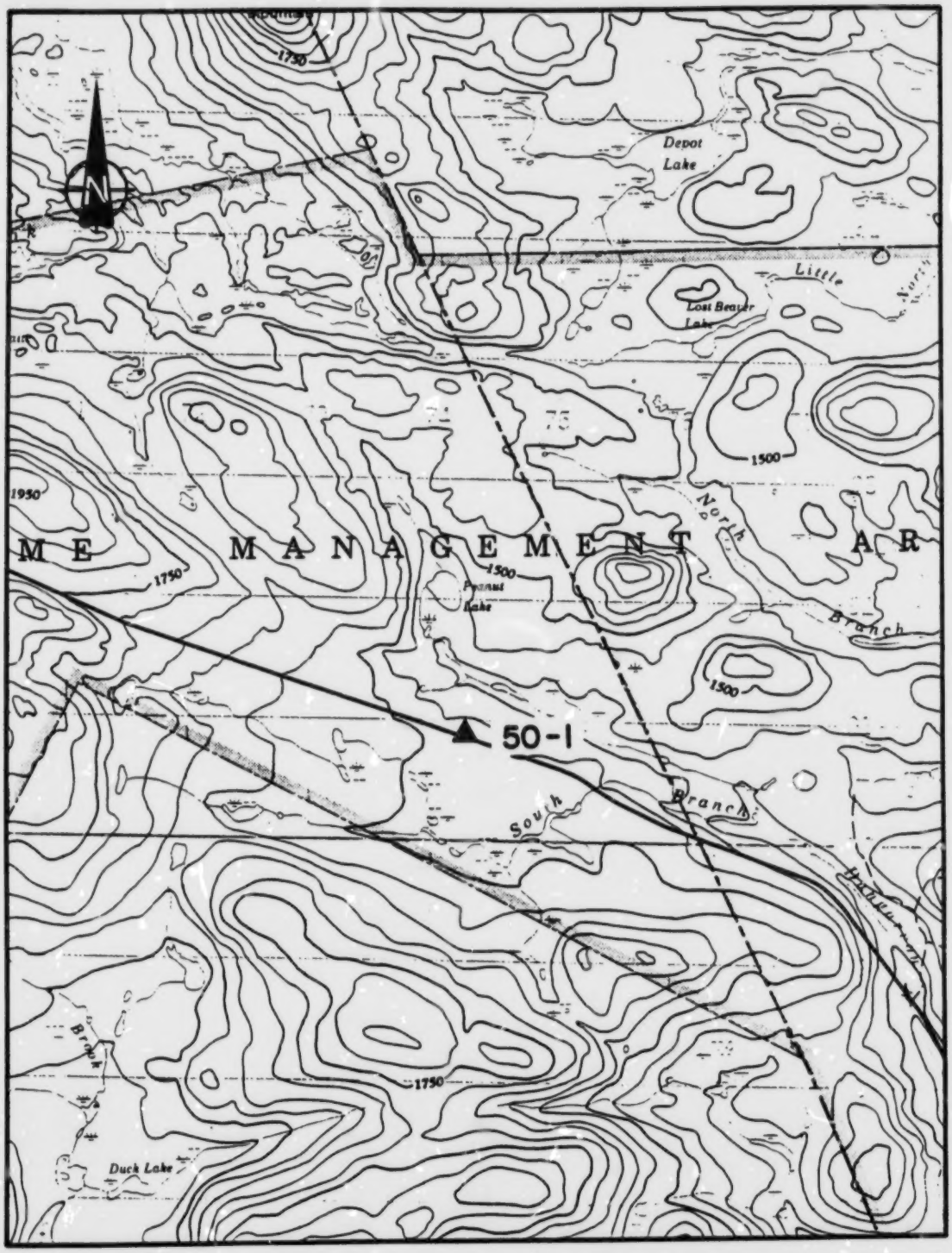


Figure 28 Site location map for Unit 50 (scale 1:50,000).

### 3.1.34 Unit 53 Mechanic Settlement Gabbro

| | |
|---|---|
| COMMODITY: | Granite COLOUR: Black |
| LOCATION: | Mechanic Settlement, 22 km east of Sussex. |
| N.T.S.: | 21 H/11 |
| ACCESS: | Highway 114 and secondary roads to the southwest from Mechanic Settlement. |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | The Mechanic Settlement intrusion appears to be conformable with surrounding volcanic rocks of the Coldbrook Group. |
| PREVIOUS WORK: | Paktunc 1989a and 1989b, 1988, 1987 |
| GEOLOGY: | This unit is a lenticular shaped, layered intrusion consisting of a variety of mafic intrusive rock types (peridotite, olivine, pyroxenite, troctolite, olivine gabbro, olivine gabbronorite, anorthosite and gabbro. There are at least three intrusive cycles exposed at surface, each beginning with peridotite. |
| SITE SUMMARY: | Site 53-1 is located in the north central area of the intrusion. The rock at this site is a dark grey to black, medium- grained equigranular peridotite. It has intense, irregular jointing with iron staining prevalent on many joint faces. |
| SAMPLES: | Polished and honed 53-1 |
| DEVELOPMENT POTENTIAL: | This unit is a cyclic layered intrusion that has variable composition and/or texture. It is for the most part intensely jointed and fractured, with little potential for suitably sized blocks. |

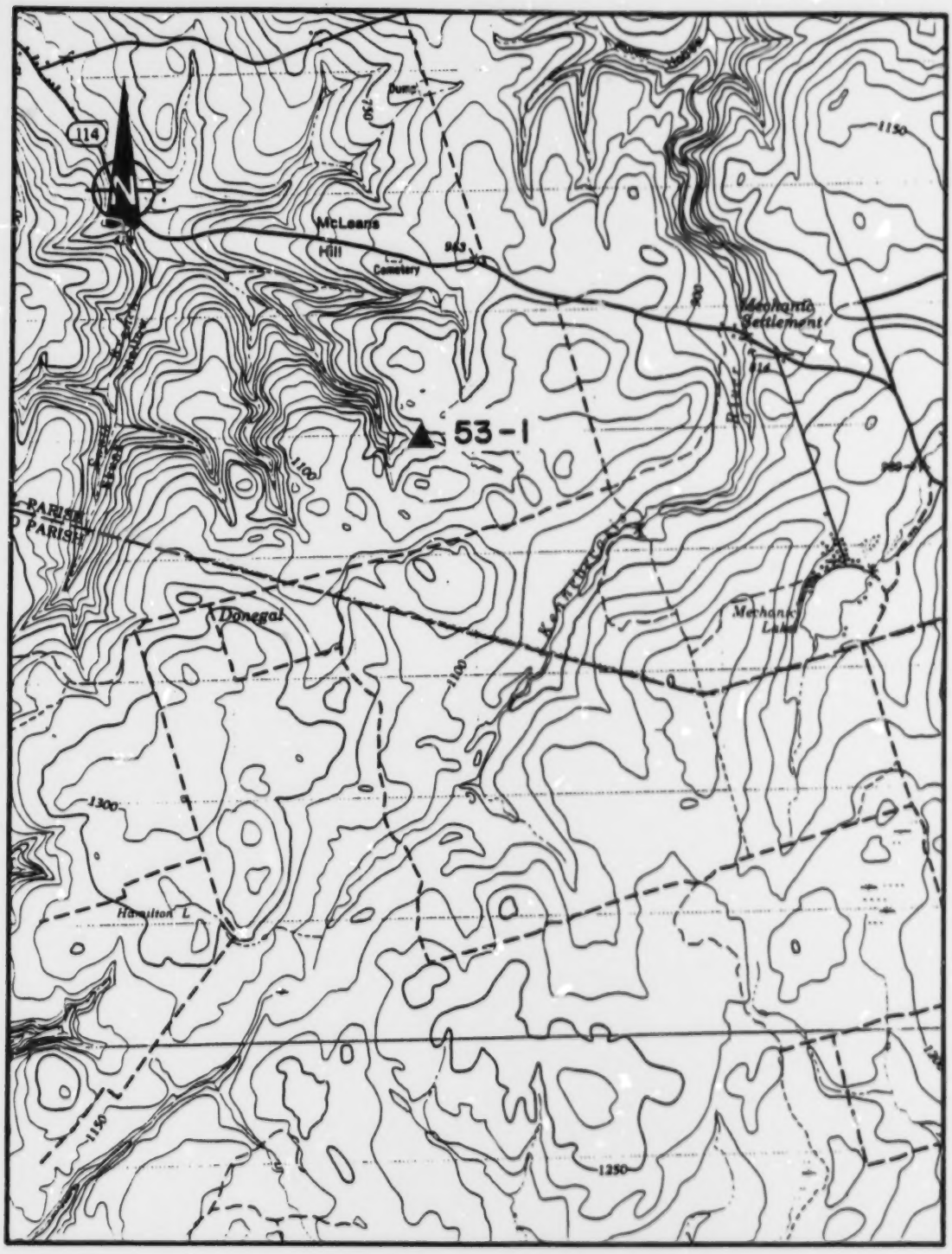


Figure 29 Site location map for Unit 53 (scale 1:50,000).

### 3.1.35 Unit 54a Bonnell Brook Syenogranite

| | |
|---|---|
| COMMODITY: | Granite COLOUR: Red |
| LOCATION: | Mary Pitcher Lake and Salmon River area, 30 km south-southeast of Sussex. |
| N.T.S.: | 21 H/11 and 21 H/06 |
| ACCESS: | Highway 111 and numerous logging roads in the area. |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | This unit lies within the Precambrian central intrusive belt of the Caledonian Highlands. |
| PREVIOUS WORK: | Barr and White 1988a and 1988b, Barr 1987: McLeod 1987; Ruitenberg et. al. 1979. |
| GEOLOGY: | This pluton occurs as several subordinate bodies with one large central body. The unit is mainly a relatively homogeneous syenogranite which varies in grain size from medium-grained equigranular to fine-grained microporphyritic. The microporphyry tends to occur mainly along the margins of the pluton. |
| SITE SUMMARY: | Site 54A-1 is located in the north central portion of the main pluton. The rock is orangish red, fine-grained and equigranular. It has irregular, moderately spaced jointing at this site. Joint spacing varies locally from intense to wide. |
| SAMPLE: | Polished and honed 54a-1 |
| DEVELOPMENT POTENTIAL: | This unit has questionable dimension stone potential. It has a desirable colour and grain size but the pluton for the most part is intensely jointed and/or fractured. It does have isolated areas that display moderate and some wide spaced joints. Further evaluation could be warranted on the basis of the high market potential of this colour. |

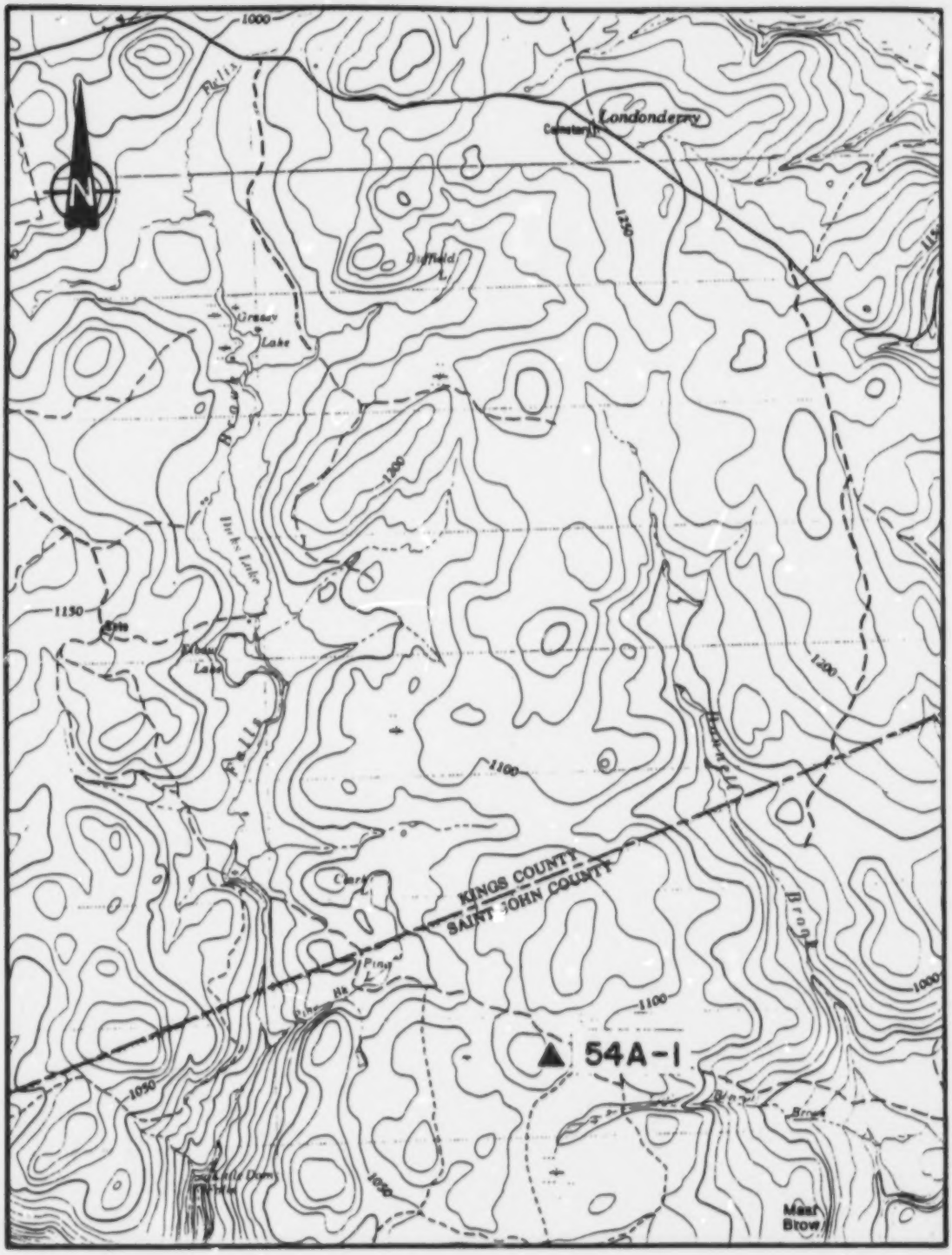


Figure 30 Site location map for Unit 54a (scale 1:50,000).

### 3.1.36 Unit 54b Bonnell Brook Diorite

| | |
|---|---|
| COMMODITY: | Granite COLOUR: Black |
| LOCATION: | Salmon River area east of Mary Pitcher Lake, 30 km south southeast of Sussex. |
| N.T.S.: | 21 H/11 and 21 H/06 |
| ACCESS: | Highway 111 and numerous logging roads in the area. |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | This diorite unit lies on the eastern contact of the Bonnell Brook Pluton. The unit is within the Precambrian central intrusive belt of the Caledonian Highlands. |
| PREVIOUS WORK: | Barr and White 1988a and 1988b, Barr 1987; McLeod 1987; Ruitenberg et. al. 1979 |
| GEOLOGY: | The rock in this unit is diorite to quartz diorite in composition. It varies in grain size from medium to coarse. It is cut by numerous dykes of syenogranite. |
| SITE SUMMARY: | The outcrop observed did not warrant completion of a site data record or location map. The rock observed was intensely fractured and had numerous late stage dykes and veins. |
| SAMPLES: | No sample taken |
| DEVELOPMENT POTENTIAL: | This unit has very low potential as a dimension stone. |

### 3.1.37 Unit 56 Crystal Lapilli Tuff

| | |
|---|---|
| COMMODITY: | Volcanic COLOUR: Black |
| LOCATION: | Londonderry, 20 km southeast of Sussex. |
| N.T.S.: | 21 H/11 |
| ACCESS: | Highway 111, Shepody Road and numerous logging roads in the area. |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | This unit is a member of the Precambrian volcanic suite, Coldbrook Group. It lies in the central volcanic belt of the Caledonia Highlands. |
| PREVIOUS WORK: | Barr 1988, 1987: Ruitenberg et al 1979. |
| GEOLOGY: | This unit is mainly volcanic breccia or lapilli tuff and is typically dacitic in composition. Basaltic rocks occur locally as lapilli tuffs and rarely as amygdaloidal flows. Both rocks tend to be massive and black on the fresh surface. Lapilli range up to 1 m or more in extent and have a variable texture. |
| SITE SUMMARY: | A site data sheet was not completed for this unit. The unit is intensely jointed and break into blocks generally less than 20 $cm^3$ in size. |
| SAMPLES: | Hand sample 56 |
| DEVELOPMENT POTENTIAL: | This unit locally has a unique texture. However the intense jointing results in small block sizes and a low potential for most applications. |

### 3.1.38 Unit 57 Forty-five River Pluton

| | | |
|---|---|---|
| COMMODITY: | Granite | COLOUR: Pink |
| LOCATION: | Fundy Park and south of Teahans Corner, 50 km south southwest of Moncton. | |
| N.T.S.: | 21 H/10 and 21 H/11 | |
| ACCESS: | Highway 114 and Teahans Corner road. | |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | This unit lies within the Precambrian eastern volcanic belt of the Caledonia Highlands. |
| PREVIOUS WORK: | Barr and White 1988a and 1988b, Barr 1987; Ruitenberg et. al. 1979. |
| GEOLOGY: | This unit is made up of two separate elongated granodiorite bodies. They are distinctively greenish and medium-grained with a sub-porphyritic, inequigranular texture. Locally a strong and pervasive foliation is developed in the pluton in response to shearing and cataclasis. The rocks have been highly altered and saussuritized. |
| SITE SUMMARY: | Site 57-1 is located near the eastern limit of the intrusion just east of Fundy Park. The rock has been subjected to severe brittle deformation and quartz-epidote veining. |
| SAMPLES: | Not finished sample 57-1 |
| DEVELOPMENT POTENTIAL: | The unit has very low potential due to alteration, intense fracturing and random veining. |

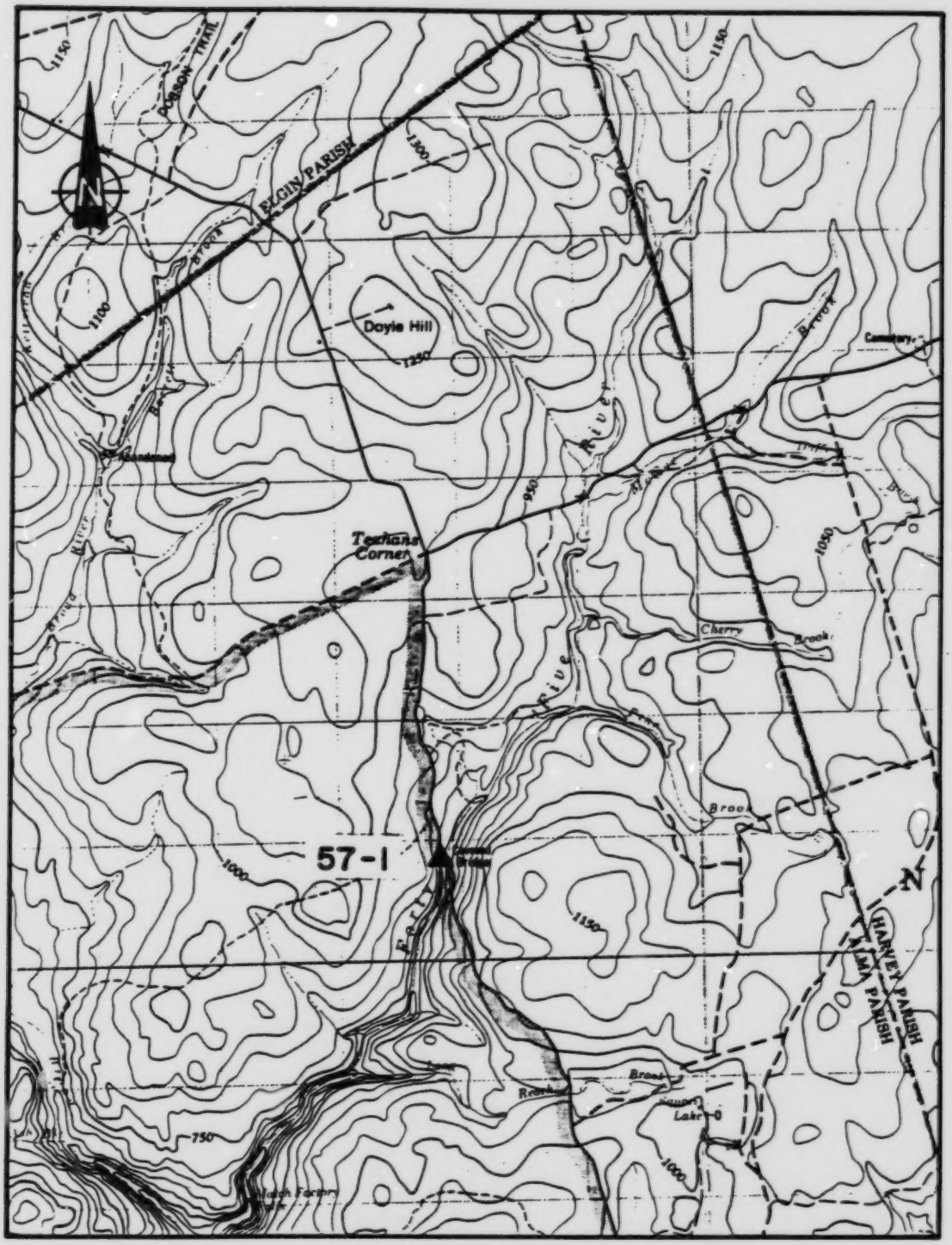


Figure 31 Site location map for Unit 57 (scale 1:50,000).

### 3.1.39 Unit 58 Southern Carboniferous Zone - Hopewell Group

COMMODITY: Sandstone COLOUR: Red

LOCATION: Several areas between Alma and Sackville.

N.T.S.: 21 H/10; 21 H/15; 21H/16

ACCESS: Various highways and secondary roads in the area.

DESCRIPTION

GEOLOGICAL SETTING: The rocks of the area comprise a sequence of fluviatile, possible lacustrine and minor shallow marine, sedimentary rocks that were deposited during Late Devonian and Carboniferous time upon a surface of Upper Precambrian rocks (Coldbrook and equivalents).

PREVIOUS WORK: McLeod and Ruitenberg 1978; Norman 1931; Van de Poll 1972.

GEOLOGY: Several separate sandstone units were evaluated in the area. These included the Boss Point Formation, the Maringouin Formation and parts of the Hopewell Group, Pictou Group, Windsor Group and Enrage Formation.

SITE SUMMARY: Site 58-1 is located about 2.5 km north of Hopewell Hill. The rock is part of the Hopewell Group and is a grey-red fine-grained sandstone dipping 15° to the north. It has irregular, moderately spaced joints. Beds average about 1 metre thick and have intense partings. The rock contains numerous "bullet holes". There is a layer of green reduced sandstone with a carbonate cement.

The other sites evaluated in the area did not display sufficient quality to warrant a site data sheet.

SAMPLES: Honed 58-1

**DEVELOPMENT POTENTIAL:**

Historically there has been red, grey and tan coloured sandstone extracted from several quarries in the study area. The possibility of finding a new quarry is not out of the question but it will require extensive systematic exploration to identify suitable beds with potential.

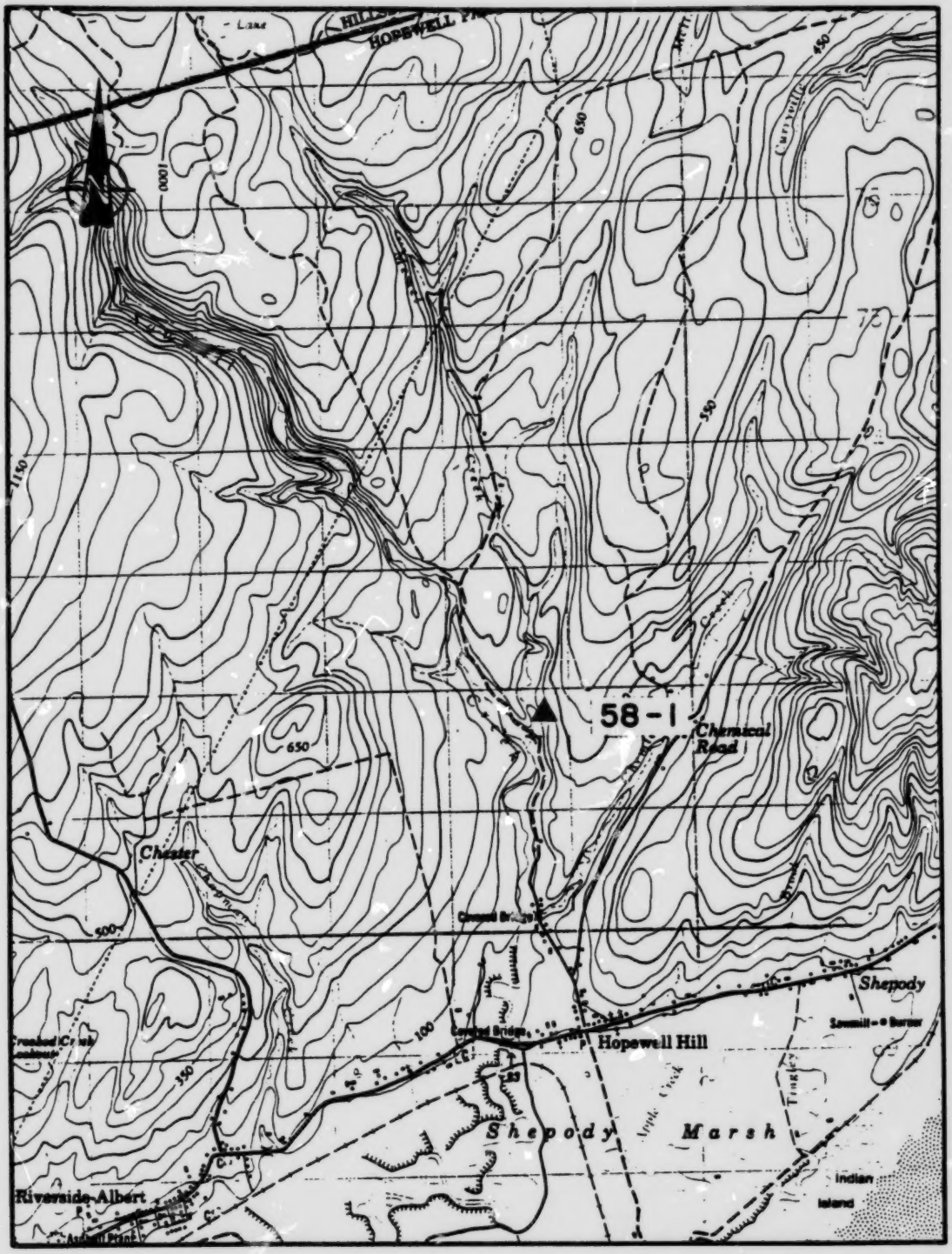


Figure 32 Site location map for Unit 58 (scale 1:50,000).

## 3.1.40 Unit 59 Northern Carboniferous Zone - Bathurst Formation

| | |
|---|---|
| COMMODITY: | Sandstone COLOUR: Red |
| LOCATION: | Bathurst south to Heath Steele CNR spur line. |
| N.T.S.: | 21 P/12 and 21 P/05 |
| ACCESS: | Highway 8, 11, 360. Taylor Brook Road, Pabineau Falls Road and numerous logging roads. |

DESCRIPTION

| | |
|---|---|
| GEOLOGICAL SETTING: | The Pennsylvanian Bathurst Formation unconformably overlies older rocks. |
| PREVIOUS WORK: | Skinner 1953, 1974. |
| GEOLOGY: | The Bathurst Formation consists essentially of red sandstone and shale and minor red quartzose conglomerate. It grades upward into the Clifton Formation.<br><br>Medium- to fine-grained red sandstone is prevalent in the north (21 P/12 map area) and red siltstone and shale dominate the southern part (21 P/05 map area). Bedding is generally horizontal but can dip up to 13 degrees locally. |
| SITE SUMMARY: | Good exposures of red sandstone beds were not found in the areas evaluated.<br><br>Site 59-1 is located near Bass River on the side of the new Allardville bypass and was sampled for display purposes only. The site has low potential for dimension stone. |
| SAMPLES: | Honed 59-1 |
| DEVELOPMENT POTENTIAL: | Sandstone beds with possible development potential were not found in this study. Exposures were either basal conglomerates near the Nepisguit River or shale and siltstone along isolated |

road cuts. The area may have a red sandstone unit that could have potential but detailed mapping would be required to locate and define its extent.

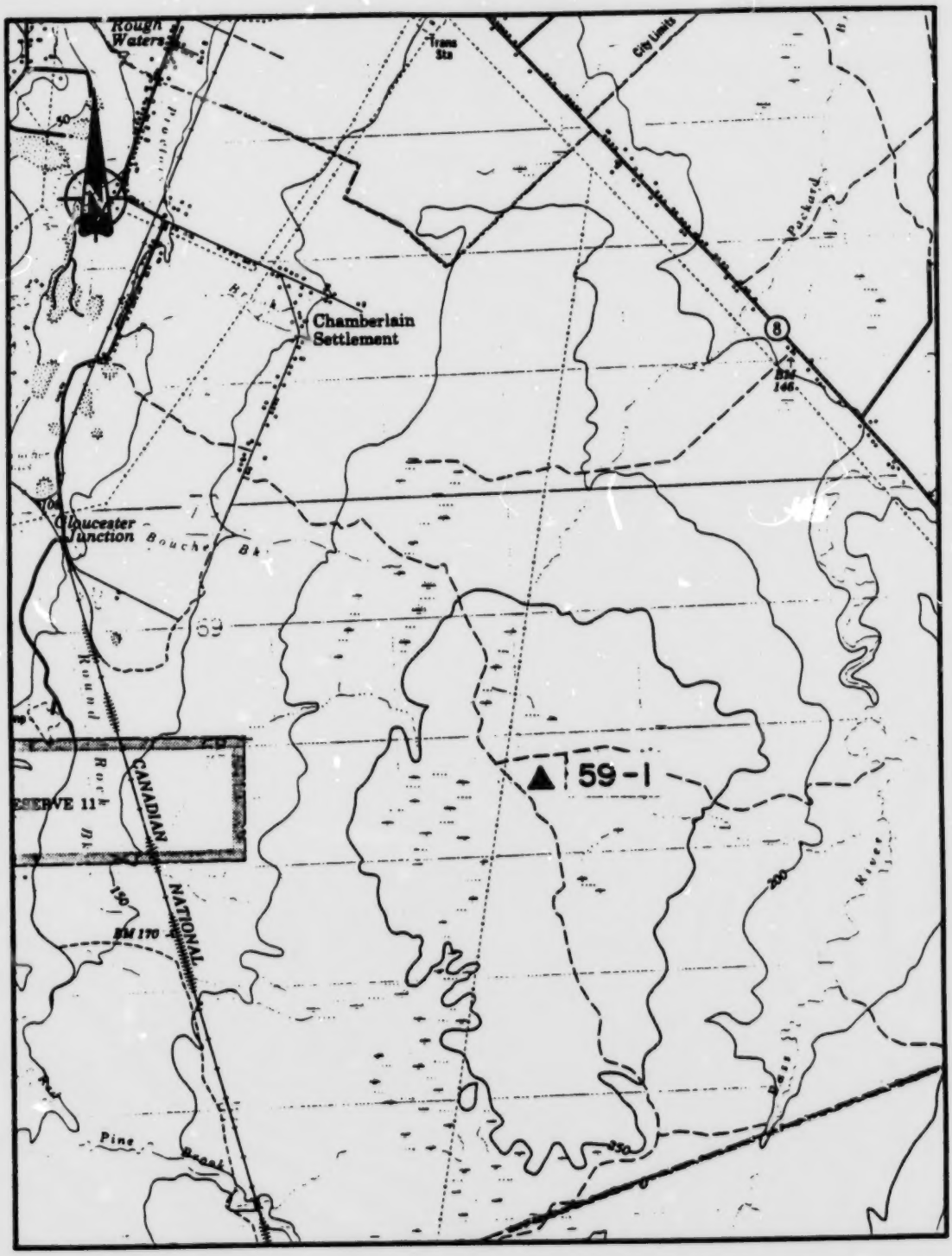


Figure 33 Site location map for Unit 59 (scale 1:50,000).

## 4.0 CONCLUSIONS AND RECOMMENDATIONS

A reconnaissance field evaluation of forty rock units was conducted to assess their potential as sources of dimension stone. Table 2 provides a listing of the rock unitsthat were evaluated and indicates the general type of rock, the colour and the overall potential of each rock unit. Potential was rated as high, moderate or low based on the results of the field investigation. Among the criteria used to rate the potential were development factors such as block size, homogeneity of the rock, imperfections and similar factors. Market factors such as colour, texture, and overall appeal of the stone werealso considered on the basis that a high market potential could result in a site being economically viable despite limitations on block size or other factors.

Evaluation of the dimension stone potential of a particular unit is somewhat subjective. As discussed in Chapter2, colour and texture are often key elements in the marketability of stone. Since pink and grey granite are relatively common colours on a global scale, units of this type were considered to be of lower potential than blacks, reds and other more unique colours. It should be noted that market taste and acceptance of a particular type ofstone can change with time. Therefore, several units rated as having moderate potential havefavourable characteristics with respect to block size and stone quality and probably warrant further evaluation.

It was noted that the units that appear to have the highest market appeal are those that are relatively rare from a geological perspective. Rocks such astroctolites, monzonites, and tonalite are found infrequently relative to granites and gabbros. This rarityor uniqueness can be asignificant factor in the marketplace.

Samples were processed from a total of 34 sites. Thirty-two of these haveboth a polished and a honed sample available for viewing. For two sandstone sites, only honed samples were prepared. Unfinished samples of additional sites have been collected and submitted for storage.

Of the rock units evaluated, two were rated as having high development potential. The West Portage Brook Troctolite (Unit 8) is a black, medium- to coarse-grained intrusive rock that is a good target for further evaluation, particularly in the vicinity of Site 8-2. The North Pole Stream Granodiorite (Unit 14d) is a grey to black biotite granodiorite. The development potential for this rockunit also suggests further evaluation should beconsidered. Some inclusionswere observed locally but additional investigationcould identify areas with few imperfections (or in sufficiently large quantities to impart a unique texture to the rock).

Several other rock units are classed as having moderate potential and warrant further evaluation. In some cases, the assessment of potential was made on the basis of only limited outcrop exposure. In other cases, colour or texture were perceived to have limited market appeal. Joint and fracture density, deleterious mineralogy, and imperfections appeared restrictive at some of the locations investigated. It should be noted however, that more detailed evaluations could locate areas of higher potential. Rock units rated ashaving moderate potential warranting further evaluationinclude: Goodwin Lake Gabbro (Unit 11),North Pole Stream Biotite Granite(Unit 14a), Fox Ridge Granite (Unit 48), South Renous River Granite (Unit 49) west side, and Bonnell Brook Syenogranite (Unit 54a).

## Table 2 SUMMARY OF ROCK UNITS EVALUATED

| Unit | Number/Name | Commodity | Colour | Finished Sample # | Potential |
|---|---|---|---|---|---|
| 3 | Jacquet River Gabbro | Granite | Black | | Low |
| 5 | Nicholas Denys Granodiorite | Granite | Black | | Low |
| 7 | Ramsay Brook Gabbro | Granite | Black | 7-1 | Moderate |
| 8 | West Portage Brook Troctolite | Granite | Black | 8-1 | Low |
| | | | | 8-2 | High |
| 9 | Mount Walker Troctolite | Granite | Black | 9-1 | Low |
| | | | | 9-2 | Low |
| 10a | Mount Elizabeth Granite | Granite | Pink | | Low |
| 10b | Mount Elizabeth Alkaline Granite | Granite | Red | 10b-1 | Moderate |
| 10d | Mount Elizabeth Syenite | Granite | Black | | Low |
| 10f | Mount Elizabeth Quartz Monzonite | Granite | Grey | | Low |
| 11 | Goodwin Lake Gabbro | Granite | Black | 11-1 | Moderate |
| 12 | Miramichi Granite | Granite | Pink | | Moderate |
| 14a | North Pole Stream Biotite Granite | Granite | Grey | 14a-1 | Moderate |
| | | | | 14a-2 | Moderate |
| | | | | 14a-3 | Moderate |
| | | | | 14a-4 | Moderate |
| | | | | 14a-5 | Low |
| 14c | North Pole Stream Granite | Granite | White | | Low |
| 14d | North Pole Stream Granodiorite | Granite | Grey | 14d-1 | High |
| | | | | 14d-2 | Moderate |
| 14e | North Pole Stream Granite - Mafic Suite | Granite | Dark Grey | 14e-1 | Low |
| 14f | Squaw Lake Granodiorite | Granite | White | | Low |
| 21 | Dungarvon Granite | Granite | Pink | | Low |
| 23 | Becaquimec Lake Gabbro | Granite | Black | | Low |
| 24 | Nashwaak Granite | Granite | Grey | 24-1 | Moderate |
| | | | | 24-2 | Moderate |
| 25 | Howard Peak Granodiorite | Granite | Grey | | Low |
| 29a | Allandale Granite | Granite | Grey | 29a-1 | Moderate |
| | | | | 29a-2 | Moderate |
| 29b | Hawkshaw Granodiorite | Granite | Grey | 29b-2 | Moderate |
| 30a | Skiff Lake Biotite Granite | Granite | Pink | 30a-1 | Moderate |
| | | | | 30a-2 | Moderate |
| 33 | Pleasant Ridge Granite | Granite | Grey | | Low |
| 37b | McDougall Lake Biotite Granite | Granite | Grey | | Low |
| 42 | Meridian Brook Granite | Granite | Grey | | Low |
| 43 | Sweat Hill Granite | Foliated Granite | Grey | 43-1 | Moderate |
| | | | | 43-2 | Low |
| 44 | Heath Steele Granite | Granite | Pink | 44-1 | Low |
| 46 | Mullin Stream Lake Granite | Granite | Pink | | Low |
| 47 | Undivided Deformed Ordovician Granite | Granite | Grey | | Low |
| 48 | Fox Ridge Granite | Foliated Granite | Grey | 48-1 | Moderate |
| | | | | 48-2 | Low |
| 49 | South Renous River Granite | Granite | Grey | 49-2 | Moderate |
| | | | | 49-3 | Moderate |
| | | | | 49-4 | Moderate |
| 50 | Moose Lake Tonalite | Variegated Granite | Grey | | Low |
| 53 | Mechanic Settlement Gabbro | Granite | Black | 53-1 | Low |
| 54a | Bonnell Brook Syenogranite | Granite | Red | 54a-1 | Moderate |
| 54b | Bonnell Brook Diorite | Granite | Black | | Low |
| 56 | Crystal Lapilli Tuff | Volcanic | Black | | Low |
| 57 | Forty-five River Pluton | Granite | Pink | | Low |
| 58 | Southern Carboniferous Zone - Hopewell Group | Sandstone | Red | 58-1 | Low |
| 59 | Northern Carboniferous Zone - Bathurst Formation | Sandstone | Red | 59-1 | Low |

As a general comment on the study, it warrants mention that the initiative was designed to delineate rock units with market potential rather than to identify specific sites that could be readily developed into viable quarry operations. In addition, restrictive criteria pertaining to land ownership, the study area boundary, and limited road access resulted in the exclusion of some interesting rock units from being evaluated under the present work plan. On this basis, the present study should not be considered to be a definitive evaluation of dimension stone resource potential in the Province. Instead the study should be regarded as a preliminary evaluation of selected rock units in regions that did not have a previous history of stone production.

## 5.0 REFERENCES

ANDERSON, F.D. and POOLE, W.H. 1959. Woodstock-Fredericton Map Area, York, Carleton, Sunbury and Northumberland Counties, New Brunswick, Geological Survey of Canada, Map 37.

BALL, F.D., SULLIVAN, R.M., and PEACH A.R. 1981. Carboniferous Drilling Project, New Brunswick Department of Natural Resources, Mineral Resources Branch, Report of Investigation 18.

BARR, S.M. 1987. Field relations, petrology and age plutonic and associated metavolcanic and metasedimentary rocks, Fundy National Park area, New Brunswick. In Current Reserch, Part A, Geological Survey of Canada, Paper 87-1A, pg. 263-280.

BARR, S.M., and WHITE, C.E. 1988a. Field Relations, Petrology, and Age of Northeastern Point Wolfe River Pluton and Associated Metavolcanic and Metasedimentary Rocks, Eastern Caledonian Highlands, New Brunswick. In Current Research, Part B. Geological Survey of Canada, Paper 88-1B, pg. 55-67.

BARR, S.M., and WHITE C.E. 1988b. Geologiucal Maps of Central Caledonian Highlands, New Brunswick. Geological Survey of Canada, Open File 1774.

BARR, S.M. and WHITE, G.E. 1989. Revised geological maps of the central Caledonian Highlands, southern New Brunswick (parts of 21 H/5,6,10,11,12,14,15). (With marginal notes). Scale: 1:50 000. Geological Survey of Canada, (Canada-New Brunswick Mineral Development Agreement, 1984-89).Open File Report 2071.

BURTON, D.M. 1987. Lithogeochemistry and metallic mineral potential of volcanic rocks along the Jacquet River Fault, northeastern New Brunswick. (Canada-New Brunswick Mineral Development Agreement 1984-89). Open File Report 87-18. pg. 70.

CARR, G.F. 1955. The Granite Industry of Canada. Canada Department of Mines and Technical Surveys, Mines Branch, Industrial Minerals Division, No. 846.

CROCCO, PETER E. 1975. A Summary Report on the Granitic Rocks of New Brunswick. New Brunswick Department of Natural Resources, Mineral Resources Branch, Topical Report 75-6, 150 pg.

CROUSE, G.W. 1979. Geology of Head Southwest Nepisguit River Head of North Pole Brook, Mitchell Lake Region, Map-Areas L-9, L-10 and L-11 (Parts of 21 O/2, 21 O/7). Department of Natural Resources, Mineral Resources Branch, Map Report 79-4.

CURRIER, L.W. 1960. Geologic Appraisal of Dimension-Stone Deposits. U.S. Department of the Interior, Geological Survey Bulletin 1109, 78 pg.

FLAHERTY, G.F. and NORMAN, G.W.H. 1939. Albert, Albert County, New Brunswick. Canada Department of Mines and Resources. Mines and Geology Branch, Map 648A.

FYFFE, L.R. 1973. L-6, head of McCormick, Ferguson and Ramsay Brooks (21 O/10E). New Brunswick Department of Natural Resources, Mineral Resources Branch. Map Plate 74-159.

FYFFE, L.R. 1974. N-5, upper parts of Jacquet and Tetagouche Rivers (21 O/9W, 21 O/10W). New Brunswick Department of Natural Resources, Mineral Resources Branch, Map Plate 74-161.

FYFFE, L.R. 1982. Geological compilation of Plaster Rock, Victoria County (21 J/14). New Brunswick Department of Natural Resources, Mineral Resources Branch, Map Plate 84-315.

FYFFE, L.R. and PRONK, A.G. 1985. Bedrock and Surficial Geology - Rock and Till Geochemistry in the Trousers Lake Area, Victoria County, New Brunswick. Department of Natural Resources, Mineral Resources Division, Report of Investigation No. 20.

FYFFE, L.R., and NOBLE, J.P.A. 1985. Stratigraphy and Structure of the Ordovician, Silurian and Devonian of Northern New Brunswick. Geological Association of Canada, Mineralogical Association of Canada, Excursion 4.

FYFFE, L.R., PAJARI, G.E., and CHERRY, M.E. 1981. The Acadian Plutonic Rocks of New Brunswick. Maritime Sediments and Atlantic Geology, Volume 17, pg. 23-36.

GARDINER, W.W. 1989. The Burnthill granites and related tungsten-molybdenum and tin deposits. In Mineral Deposits Associated with Siluro-Devonian Plutonism in the New Brunswick-Gaspé Sector: Field Guidebook B5, E.L. Procyshyn, W.D. Sinclair, A.E. Williams-Jones (editors). Geological Association of Canada/Mineralogical Association of Canada, Meeting, Montréal, Québec, pgs. 51-62.

GARDINER, W.W. and GARNETT, K. 1986a. A field investigation of granites in the Dungarvin area of New Brunswick. In Eleventh Annual Reveiw of Activities, Project Résumés, S.A. Abbott (editor). New Brunswick Department of Natural Resources and Energy, Mineral Resources Division, Information Circular 86-2, pg. 57-60.

GARDINER W.W. and GARNETT, K. 1986b. Geology of the Dungarvin and Sisters Brook granites (parts of 21 J/10 and 21 J/15). Canada-New Brunswick Mineral Development Agreement 1984-1989, Map Plate 87-55.

HAMILTON, F.J. 1876. A Trip Over the Intercolonial Including Articles on the Mining Industries of Nova Scotia and New Brunswick With a Description of the Cities of Saint John and Halifax. Re-printed from the Montreal "Gazette". pg. 63-67.

HELMSTAEDT, H. 1971. Structural Geology of Portage Lakes Area, Bathurst-Newcastle District, New Brunswick. Geological Survey of Canada, Paper 70-28.

IRRINKI, R.R. 1974. Geology of Map Area N-4, McNair and Rocky Brooks (21 O/9, 21 O/16). New Brunswick Department of Natural Resources, Mineral Resources Branch, Map Plate 75-76.

IRRINKI, R.R. 1978. Geology of Head of Dungarvin and Renous Rivers, Map Area L-13 (21 J/15). New Brunswick Department of Natural Resources, Mineral Resources Branch, Map Report 78-2, 20 pgs.

IRRINKI, R.R. 1980. Geology of Kennedy Lakes-Little Dungarvon and South Renous River Region Map, Areas M-13, M-14, M-15 and Part of M-16. New Brunswick Department of Natural Resources, Mineral Resources Division, Map Report 80-2.

IRRINKI, R.R. 1981. Geology of Rocky, Sisters and Clearwater Brooks-Todd Mountain Region, Map Areas L-14,L-15,1-16 (parts of 21 J/10, 21 J/15) York and Northumberland Counties. New Brunswick Department of Natural Resources, Mineral Resources Branch, Map Report 81-7, 30 pgs.

IRRINKI, R.R. 1882. Geology of Big Bald Mountain (21 O/1). New Brunswick Department of Natural Resources, Mineral Resources Branch, Map Plate 86-10.

IRRINKI, R.R. 1986. Geology of Big Bald Mountain, New Brunswick Department of Natural Resources, Mineral Resources Division, Map Report 86-2 includes (MP-86-10).

IRRINKI, R.R. and DAVIES, J.L. 1971. P-4, Forks of Tomogonops, Portage and N.W. Miramichi. New Brunswick Department of Natural Resources, Mineral Resources Branch, Map Plate 71-44.

LEBARON P.S., VERSCHUREN, C.P., PAPERTZIAN, V.C., KINGSTON, P.W. 1989. Building Stone Potential in Eastern Ontario; Ontario Geological Survey, Open File Report 5706, 58 pg.

LUTES, G. 1979. Geology of Fosterville-North and Eel Lakes, Map Area G-23 and Canterbury-Skiff Lake, Map Area H-23 (parts of 21 G/13, 21 G/14). New Brunswick Department of Natural Resources, Mineral Resources Branch, Map Report 79-3, 22 pgs.

LUTES, G. 1981. Geology of Deersdale-Head of Nashwaak River, Map-Area J-17, and Upper Parts of Nashwaak River-McBean and Sisters Brooks, Map Area J-18, New Brunswick Department of Natural Resources, Mineral Resources Division, Map Report 81-4.

LUTES, G.G. 1987. Geology and Geochemistry of the Pokiok Batholith New Brunswick. New Brunswick Department of Natural Resources and Energy, Minerals and Energy Division, Report of Investigation 22.

MARTIN, R.F. 1970. Petrogenetic and Tectonic Implications of Two Contrasting Devonian Batholithic Associations in New Brunswick, Canada. American Journal of Science, No. 268, pg. 309-321.

MCCUTCHEON, S. and LUTES, G. 1981. The Pokiok Batholith: A Contaminated Acadian Intrusion With an Anomalous Rb/Sr Age. Canadian Journal of Earth Sciences, Vol. 18, pg. 910-918.

MACLELLAN, H.E. and TAYLOR R.P. 1989. Geology and Geochemistry of the Burnthill Granite and Related W-Sn-Mo-F Mineral Deposits, Central New Brunswick. Canadian Journal of Earth Sciences, Vol. 26, pgs. 499-514.

MCLEOD, M.J., RUITENBERG, A.A. 1978. Geology and Mineral Deposits of the Dorchester Area, Map Area W-22, W-23. New Brunswick Department of Natural Resources, Mineral Resources Branch, Map Report 78-4.

MCLEOD, M.J. 1987. Geology, Geochemistry, and Mineral Deposits of the Big Salmon River - Goose River Area, New Brunswick, Map Area S-27 and Parts of R-27, S-26, and T-26. New Brunswick Department of Natural Resources and Energy, Minerals and Energy Division, Report of Investigation 21.

MCLEOD, M.J. 1988. Saint George Batholith Project. In Project Summaries for 1988, Thirteenth Annual Review of Activities. Edited by S.A. Abbott. New Brunswick Department of Natural Resources and Energy, Minerals and Energy Division, Information Circular 88-2, pg.43-46.

MCLEOD, M.J. 1989. Geological Maps, Saint George Batholith Project. Mineral Resources Branch, New Brunswick Department of Natural Resources, MP 89-98 A to T. Scale 1:20,000.

NORMAN, G.W.H. 1941. Hillsborough, Albert and Westmorland Counties, New Brunswick. Canada Department of Mines and Resources, Mines and Geology Branch, Map 647A.

PAKTUNC, A.D. 1987. The Portage Brook Troctolite, a Layered Intrusion in the New Brunswick Appalachians. In Current Research, Part B. Geological Survey of Canada, Paper 88-1B, pg. 149-154.

PAKTUNC, A.D. 1988. Nickel-Copper Sulphide Mineralization Associated with the Goodwin Lake Intrusion, Northern New Brunswick. In Current Research, Part B. Geological Survey of Canada, Paper 88-1B, pg. 155-161.

PAKTUNC, A.D. 1989a. Platinum-Group-Element Mineralization in the Mechanic Settlement Intrusion, Kings County, New Brunswick. In Project Summaries for 1989, Fourteenth Annual Review of Activities. Edited by S.A. Abbott. New Brunswick Department of Natural Resources and Energy, Minerals and Energy Division, Information Circular 89-2, pg. 213-214.

PAKTUNC, A.D. 1989b. Geology of the Mechanic Intrusion. Geological Survey of Canada, Open File 2024.

PARKS, W.A. 1914. Report on the Building and Ornamental Stones of Canada Vol. II, Maritime Provinces. Canada Department of Mines, Mines Branch, No. 203.

PATTERSON, JOHN A. 1948. Survey of Saint George Granite Quarries Dec. 9-10 1948, Department of Industry and Reconstruction, Fredericton, N.B.

RUITENBERG, A.A. and FYFFE, L.R. 1982. Mineral deposits associated with granitoid intrusions and related subvolcanic stocks in New Brunswick and their relationship to Appalachian tectonic evolution. Canadian Institute of Mining and Metallurgy Bulletin 75, No. 842, pgs. 83-97.

RUITENBERG, A.A., GILES, P.S., VENUGOPAL, D.V., BUTTIMER, S.M., MCCUTCHEON, S.R, and CHANDRA J. 1979. Geology and Mineral Deposits, Caledonian Area. New Brunswick Department of Natural Resources and Canada Department of Regional Economic Expansion.

STOREY C.C. 1986. Building and Ornamental Stone Inventory in the Districts of Kenora and Rainy River. Ontario Geological Survey. Mineral Deposits Circular 27; 168 pg.

SKINNER, R. 1953. Bathurst, Gloucester and Restigouche Counties, New Brunswick. Geological Survey of Canada, Paper 53-29.

SKINNER, R. 1974. Geology of Tetagouche Lakes, Bathurst, and Nepisiguit Falls Map-Areas, New Brunswick. Geological Survey of Canada, Memoir 371.

SKINNER, R. 1975. Geology of the Tuadook Map Area (21 J/15), New Brunswick. Geological Survey of Canada, Paper 74-33, 9 pg.

THOMAS, M.D. and WILLIS C. 1989. Gravity Modelling of the Saint George Batholith and Adjacent Terrane Within the Appalachian Orogen, Southern New Brunswick. Canadian Journal of Earth Sciences, Vol. 26, pgs. 561-576.

THREE-D GEOCONSULTANTS LIMITED. 1989. New Brunswick Stone: Decorative and Architectural. New Brunswick Department of Natural Resources and Energy, Minerals and Energy Division, Miscellaneous Report No. 7, 23 p.

VAN DE POLL, H.W. 1972. Stratigraphy and economic geology of Carboniferous basins in the Maritime Provinces. In Field Excursion A60, D.J. Glass (editor), 24th International Geological Congress, Montreal, Quebec, pg. 33-48.

VENUGOPAL, D.V. 1982. Geology of Upper Parts Becaguimec, Keswick and Nashwaak Rivers, Cloverdale-Millville Map Areas I-19, J-19, J-20; New Brunswick, Department of Natural Resources, Mineral Resources Division, Map Report 82-2.

VERSCHUREN, C.P., and KINGSTON P.W. 1989. Criteria for Quarry Development in Southeastern Ontario, the Canadian Institute of Mining and Metallurgy Bulletin, February,1989, pg. 55-60.

VERSCHUREN, C.P., PAPERTZIAN, V.C., KINGSTON, P.W., VILLARD, D.J. 1986. Reconnaissance Survey of Building Stones of Eastern and Central Ontario. Ontario Ministry of Northern Development and Mines, Ontario Geological Survey, Open File Report 5585.

VERSCHUREN, C.P., VANHAAFTEN, S. and KINGSTON, P.W. 1985. Building Stones of Eastern Ontario, Ontario Ministry of Natural Resources, Ontario Geological Survey, Open File Report 5556.

WEBB, T.C. 1977. The Madran-Alcida Ornamental Stone Occurrence, Gloucester County, New Brunswick. New Brunswick Department of Natural Resources and Energy, Minerals and Energy Division, Open File 77-19, 6 pg.

WHALEN, J.B. 1987. Geology of a Northern Portion of the Central Plutonic Belt. New Brunswick. In Current Research, Part A. Geological Survey of Canada, Paper 87-1A, pg. 209-217.

WHALEN, J.B. 1988. Geology of a Northern Portion of the Central Plutonic Belt. New Brunswick Department of Natural Resources, Mineral Resources Branch, Map Plate 88-87.

WILLIAMS, D.A. 1976. Geology of Map Area Q-4, Petit Rocher, Elmtree, Nigadoo, Beresford (21 P/12, 21 P/13); New Brunswick Department of Natural Resources, Mineral Resources Division, Map Plate 77-1.

WRIGHT, W.J. 1934. Preliminary Report of the Granite Industry of St. George, Charlotte County, N.B. New Brunswick Department of Natural Resources and Energy, Minerals and Energy Division, Reference 42.

ZIELINSKI, B. 1988. I.T.C. Rules Foreign Granite Doesn't Materially Injure U.S. Market - An Analysis of the Decision. Dimensional Stone Magazine, October, 1988, pg. 18-25.

# APPENDIX 1

## List of Rock Units Identified

## LIST OF ROCK UNITS IDENTIFIED
(see Plate 90-11 in back pocket for location of units)

| Number | Unit Name | Comments | Field Evaluation |
|---|---|---|---|
| 1. | Quisibis Mountain Stock | Outside the study area | No |
| 2. | Charlo Stocks | Outside the study area but may have some potential | No |
| 3. | Jacquet River Gabbro | No sample available, warrants a field check | Yes |
| 4. | Antinouri Lake Granite | Previous quarrying history (see Miscellaneous Report No. 7) | No |
| 5. | Nicholas Denys Granodiorite | Moderate priority Restricted potential due to land ownership | Yes |
| 6. | Pabineau Falls Granite | Previous quarrying history (see Miscellaneous Report No. 7) | No |
| 7. | Ramsay Brook Gabbro | Warrants a field check | Yes |
| 8. | West Portage Brook Troctolite | SEmp - colour and texture are interesting | Yes |
| 9. | Mount Walker Troctolite | SEmd - several occurrences between Mount Walker and Little Bald Mountain | Yes |
| 10. | Mount Elizabeth Granite | | |
| | 10a. SEpg (Whalen,1988) | Core of the Mount Elizabeth Granite; yellowish-pink biotite granite | Yes |
| | 10b. SEag (Whalen, 1988) | alkaline granite - several occurrences, three of which have potential: Mount Edward, Mount Marie and near Mount Des Barres, several others show low market potential | Yes |

LIST OF ROCK UNITS IDENTIFIED (cont'd)
(see Plate 90-11 in back pocket for location of units)

| Number | Unit Name | Comments | Field Evaluation |
|---|---|---|---|
| 10c. | SEaa (Whalen,1988) | Aplite - low potential | No |
| 10d. | SEas (Whalen,1988) | Syenite - one small area has limited potential | Yes |
| 10e. | SEah (Whalen,1988) | Hybrid intrusive rocks with limited potential | No |
| 10f. | SEag (Whalen,1988) | Quartz monzonite - several occurrences | Yes |
| 11. Goodwin Lake Gabbro | SEmG (Whalen,1988) | Potential may be limited due to mineralization | Yes |
| 12. Miramichi Granite - SM | SM (Whalen,1988) | Low potential, pink colour | Yes |
| 13. Clark Mountain Gabbro | SRd (Whalen,1988) | May have potential but located on freehold land. Gates on access roads resulted in exclusion from field evaluation. | No |
| 14. North Pole Stream Granite | | | |
| 14a. | SNg (Whalen,1988) | medium- to coarse - grained biotite granite, covers a large area with limited access and limited potential - one area near North Pole Brook east of Hickey Lakes has some potential | Yes |
| 14b. | SNb (Whalen,1988) | fine- to medium-grained muscovite-biotite granite, mainly small occurrences found near or within the SNg unit, largest occurrence is at Long Lake on freehold land - low potential | No |
| 14c. | SNm (Whalen,1988) | fine- to medium - grained muscovite-biotite granite - found at Long Lake on freehold land and Gover Lake on Crown land | Yes |

LIST OF ROCK UNITS IDENTIFIED (cont'd)
(see Plate 90-11 in back pocket for location of units)

| Number | Unit Name | Comments | Field Evaluation |
|---|---|---|---|
| 14d. | SNgd (Whalen,1988) | medium- to coarse-grained biotite granodiorite, south-east of Big Bald Mountain | Yes |
| 14e. | SNd (Whalen,1988) | Mafic suite - has some potential SW of Sinclair Mtn. fire tower and south of Hickey Lakes | Yes |
| 14f. | Squaw Lake (Whalen,1988) | medium-grained white biotite - muscovite granite | Yes |
| 15. | North Dungarvon Granite | Df4 - pink to grey, medium - grained muscovite-biotite granite; low market potential due to colour and texture | No |
| 16. | Redstone Mountain Granite | SRg (Df1) scarlet biotite granite; on freehold land but has potential due to its appealing colour. Gates on access roads resulted in exclusion from field evaluation. | No |
| 17. | Clearwater Brook Gabbro- Dm (NR-4) | Foliated biotite granodiorite; on freehold land - some potential; gates on access road resulted in exclusion from field evaluation. | No |
| 18. | Lost Lake Granite $Df_4$ & $Df_2$ & minor Of (NR-4) | Pink to grey medium - grained biotite-muscovite granite to granodiorite, freehold lands | No |
| 19. | Juniper Barrens Granite $Df_3$ (NR-4) | Common colour and texture - on freehold land, low potential | No |

LIST OF ROCK UNITS IDENTIFIED (cont'd)
(see Plate 90-11 in back pocket for location of units)

| Number | Unit Name | Comments | Field Evaluation |
|---|---|---|---|
| 20. | Burnthill Granite DMf (NR-4) | Pink medium- to coarse - grained biotite granite with common colour and texture - freehold land, low potential | No |
| 21. | Dungarvon Granite DMf (NR-4) | Similar to above, partially on Crown Land. | Yes |
| 22. | Trout Brook Granite DMf (NR-4) | Pink medium- to coarse-grained biotite granite - common colour and texture - on freehold land, low potential. | No |
| 23. | Becaguimec Lake Gabbro - Dm (NR-4) | Situated on both Crown Land and freehold land. | Yes |
| 24. | Nashwaak Granite $Df_3$ & $Df_4$ (NR-4) | Unit $Df_4$ has a common colour and texture and is mainly on freehold land. The $Df_3$ unit is mainly on Crown Land and has some potential. | Yes |
| 25. | Howard Peak Granodiorite $Df_2$ (NR-4) | Grey to pink, foliated biotite and hornblende granodiorite and tonalite. Found mainly on Crown Land. | Yes |
| 26. | Gibson Granodiorite $Df_1$ (NR-4) | Limited potential. On freehold land and outside study area. | No |
| 27. | Benton Granite $Df_1$ (NR-4) | Unique greenish alteration, on freehold land and outside study area. | No |

LIST OF ROCK UNITS IDENTIFIED (cont'd)
(see Plate 90-11 in back pocket for location of units)

| Number | Unit Name | Comments | Field Evaluation |
|---|---|---|---|
| 28. | Hartfield Tonalite $Df_2$ (NR-4) | Not evaluated in this project (see Miscellaneous Report No.7). | No |
| 29. | Hawkshaw Granite D4 (NR-4) | | |
| | 29a. Allandale Hem (Lutes,1987) | Grey medium-grained muscovite-biotite granite with some potential, limited exposures on Crown Land. | Yes |
| | 29b. Hpg (Lutes,1987) | Grey coarse-grained biotite granodiorite, some potential but on freehold land. | Yes |
| | 29c. Hpr & Hpm & Hpb & Heb (Lutes,1988) | Unit Hpb is Pokiok sample in Miscellaneous Report No.7. The others are similar in colour and texture to that displayed in the report and are located mainly on freehold land. | No |
| 30. | Skiff Lake Granite D4 (NR-4) | | |
| | 30a. Seb (Lutes,1987) | Pink fine- to coarse-grained biotite granite - has some potential but is found only on freehold land. | Yes |
| | 30b. Sem & Spb & Seg &Spm (Lutes,1987) | Low potential and are only on freehold land. | No |
| 31. | Tower Hill Granite | Outside the study area - Common colour and texture. | No |
| 32. | Sorrel Ridge Granite $D_4$ (NR-1) Dsat (McLeod,1988) | Outside the study area. | No |

LIST OF ROCK UNITS IDENTIFIED (cont'd)
(see Plate 90-11 in back pocket for location of units)

| Number | Unit Name | Comments | Field Evaluation |
|---|---|---|---|
| 33. | Pleasant Ridge Granite<br>$D_4$ (NR-1)<br>Dsat (McLeod,1988) | Common rock type, all on freehold land. | Yes |
| 34. | Beech Hill Granite<br>$D_4$ (NR-1)<br>Dsat (Mcleod,1988) | Common rock type, partially on freehold land. | No |
| 35. | St. Stephen Pluton | Outside study area and past quarrying history (see Ledge Road in Miscellaneous Report No. 7). | No |
| 36. | Bocabec Complex<br>$D_3$ (NR-1)<br>Dbc1 (McLeod,1988) | On freehold land and partially outside the study area. Previous quarrying history (see Digdeguash in Miscellaneous Report No. 7). | No |
| 37. | McDougall Lake Granodiorite | | |
| | 37a. D4 (NR-1)<br>Dm2 (McLeod,1988) | (Magaguadavic Granodiorite) Common colour and texture, low potential. | No |
| | 37b. D4 (NR-1)<br>Dm3 (McLeod,1988) | Grey medium-grained biotite granite has some potential, mainly on Crown Land. | Yes |
| 38. | Charlotte Granite D4<br>D4 (NR-1) | | |
| | 38a. Utopia Granite<br>Du (McLeod,1988) | Pink to red, medium-grained biotite granite, has extensive production history (see St. George Red in Miscellaneous Report No. 7). | No |
| | 38b. Munson Lake Granite<br>Dmd1 (McLeod,1988) | Coarse-grained rapakivi granite; see Ragged Falls in Miscellaneous Report No. 7) mostly outside study area. | No |
| | 38c. Mount Douglas<br>Dmd2(McLeod,1988) | Common colour and texture, low potential. | No |

LIST OF ROCK UNITS IDENTIFIED (cont'd)
(see Plate 90-11 in back pocket for location of units)

| Number | Unit Name | Comments | Field Evaluation |
|---|---|---|---|
| 38d. | Disappointment Lake Suite Dmd3 (McLeod,1988) | Mixture of rock types with low potential and questionable quality. | No |
| 38e. | Jake Lee Mtn. | Low potential, alkaline granite. | No |
| 38f. | Welsford Complex | Outside the study area. | No |
| 39. | Hampstead | Outside the study area. (see Spoon Island in Miscellaneous Report No. 7). | No |
| 40. | Stewarton Complex | Outside the study area. | No |
| 41. | Popple Depot - Ogp (Whalen,1988) | Red foliated medium-grained biotite-muscovite granite, low potential. | No |
| 42. | Meridian Brook - Ogm (Whalen,1988) | Granite to granodiorite, generally foliated, has some potential southwest of Mount Johnson. | Yes |
| 43. | Sweat Hill Granite - Ogs (Whalen,1988) | Moderate to slightly foliated, porphyritic, biotite-muscovite granite, some potential if it can be found with few phenocrysts. | Yes |
| 44. | Heath Steele - Ogh (Whalen,1988) | Moderately foliated, altered biotite-muscovite granite gneiss. May have some potential. | Yes |
| 45. | Serpentine River Granite - Oge (Whalen,1988) | Pink, slightly foliated medium-grained biotite-muscovite granite - Ogeb is a porphyritic variation - common colour, low potential. | No |

LIST OF ROCK UNITS IDENTIFIED (cont'd)
(see Plate 90-11 in back pocket for location of units)

| Number | Unit Name | Comments | Field Evaluation |
|---|---|---|---|
| 46. | Mullin Stream Lake Ogu (Whalen,1988) | West end is a strongly foliated pink augen feldspar-biotite-muscovite granite. | Yes |
| 47. | Undivided deformed Granite - Og (Whalen,1988) | For the most part this unit has low potential except for an occurrence north of Mullin Lake. | Yes |
| 48. | Fox Ridge Granite Ogf (Whalen,1988) | Coarse-grained, foliated, feldspar augen biotite-muscovite granite. Very unique texture. Has a good potential. Two occurrences, one at Moccasin Lake on Crown Land and one southeast of Trousers Lake on freehold land. | Yes |
| 49. | South Renous River Ogr (Whalen,1988) | Foliated porphyritic feldspar biotite-muscovite granite, similar texture to Fox Ridge. | Yes |
| 50. | Moose Lake Tonalite COp (NR-4) | Medium- to coarse- grained, grey, biotite muscovite granite, may have some potential if similar rock can be found on Crown Land. | Yes |
| 51. | Beadle Mountain COp (NR-4) | Medium-grained, grey, biotite-muscovite granite to granodiorite, low potential, on freehold land. | No |
| 52. | Bogan Brook COp (NR-4) | Medium-grained biotite-muscovite tonalite to granodiorite - a variation of Beadle Mountain, low potential, on freehold land. | No |

LIST OF ROCK UNITS IDENTIFIED (cont'd)
(see Plate 90-11 in back pocket for location of units)

| Number | Unit Name | Comments | Field Evaluation |
|---|---|---|---|
| 53. | Mechanic Settlement Gabbro - HCgbMs (Barr and White,1989) | Has some potential due to its black colour, entirely on freehold land. | Yes |
| 54. | Bonnell Brook | | |
| 54a. | Syenogranite HCsgBB (Barr and White, 1989) | Medium orange, fine- to medium-grained syenogranite with minor dark minerals. Is found on both Crown Land and freehold land. | Yes |
| 54b. | Diorite HCdiBB (Barr and White, 1989) | Medium- to coarse-grained diorite to granodiorite - on Crown Land. | Yes |
| 55. | Point Wolfe River Pluton - HPW (Barr and White,1989) | Seven mappable rock units. This pluton has low potential due to common or unappealing colour and/or texture. Also the area has been subjected to brittle deformation. Occurs both on Crown Land and freehold land. | No |
| 56. | Crystal Lapilli Tuff - H 11 (Barr and White,1989) | Mafic to intermediate in composition - has a striking texture and appearance, on freehold land, may have good potential. | Yes |
| 57. | Forty-five River Plutons - HgdFF (Barr and White,1989) | Medium-grained, pink-green (altered) granodiorite. Has low potential but does occur on both Crown Land and freehold land in the area north of West River. | Yes |

LIST OF ROCK UNITS IDENTIFIED (cont'd)
(see Plate 90-11 in back pocket for location of units)

| Number | Unit Name | Comments | Field Evaluation |
|---|---|---|---|
| 58. | Southern Carboniferous Zone - Hopewell Group | Several red bed units were identified in the Albert Mines, Dorchester, and Sackville areas. | Yes |
| 59. | Northern Carboniferous Zone - Bathurst Formation | The Bathurst Formation consists mainly of red beds and is located south of Bathurst. | Yes |

# APPENDIX 2

## Individual Site Data Records

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 3-1 OVERALL POTENTIAL: Low

COMMODITY: Granite COLOUR: Green

NTS MAP SHEET: 21 P/13 COUNTY: Restigouche

LATITUDE: 47° 48' 55" LONGITUDE: 66° 00' 00"

UTM COORDINATES: 275418.7 mE, 5299009.2 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: Antinouri Lake; 9.4 km southwest of Mitchell Settlement on Antinouri Lake Road.

GEOLOGICAL UNIT/ROCK TYPE: Dm/Jacquet River Gabbro

PREVIOUS WORK/REFERENCES: Irrinki 1974

NATURE OF EXPOSURE: road side GENERAL SITE TOPOGRAPHY: low

FACE HEIGHT/EXPOSURE SIZE: 1m/3 X 2m PRESENT LAND USE: road access

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface ND | [ ] | [X] |
| | Depth of Weathering 1.5cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - med.grey | [X] | [ ] |
| | Wet - dark grey | [X] | [ ] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [X] | [ ] |
| | Coarse [ ] | | |
| | Medium [ ] | | |
| | Fine [X] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [X] | | |
| | Equigranular [ ] | | |
| | Inequigranular [ ] | | |
| Cementing/Integrity: Good | | | |

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:

Spacing: ND Severity: ND

JOINTING
Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [X]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip ND Spacing ND
Secondary: Strike/dip Spacing
Sheeting: Strike/dip Spacing

ESTIMATED POTENTIAL BLOCK SIZE (m): 0.5 X 0.5 X 0.5

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]
Purpose:

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [X] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: Sulphides Percentage: 1-3%

Potential Use: ND

Sample: Collected No [X] Yes [ ] Sample Number
Finished No [X] Yes [ ]

Comments: Photo # 1

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 5-1 OVERALL POTENTIAL: Low

COMMODITY: Granite COLOUR: Grey

NTS MAP SHEET: 21 P/12 COUNTY: Gloucester Co.

LATITUDE: 47° 41' 40" LONGITUDE: 65° 53' 00"

UTM COORDINATES: 283651.0 mE, 5286148.7 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [ ] FREEHOLD [X]

LOCATION AND ACCESS: 0.6 km south of Nicholas Denys.

GEOLOGICAL UNIT/ROCK TYPE: Df3/Nicholas Denys Granodiorite

PREVIOUS WORK/REFERENCES: MP 87-51B

NATURE OF EXPOSURE: Road cut GENERAL SITE TOPOGRAPHY: low - moderate

FACE HEIGHT/EXPOSURE SIZE: 0.7m/6m PRESENT LAND USE: road access

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - yellow | [ ] | [X] |
| | Depth of Weathering 1-4 cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - lt. grey | [X] | [ ] |
| | Wet | [X] | [ ] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [ ] | [ ] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: Fair

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:

Spacing: Severity:

JOINTING

Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [X]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 165/85 W Spacing ND
Secondary: Strike/dip 065/60 N Spacing 0.5-1
Sheeting: Strike/dip 070/40 S Spacing 0.3

ESTIMATED POTENTIAL BLOCK SIZE (m): 0.5 X 0.5 X 0.5

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]
Purpose:

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [X] | [ ] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [ ] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: Biotite Percentage: 5-10%

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 5-1
Finished No [X] Yes [ ]

Comments: Outcrop highly fractured, numerous joint patterns. This was the only outcrop found in the area. Several possible outcrops were noted in road bed in the immediate area.

Photo 2

Fe staining on most surfaces.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 7-1 OVERALL POTENTIAL: Moderate

COMMODITY: Granite COLOUR: Black

NTS MAP SHEET: 21 O/10 COUNTY: Restigouche

LATITUDE: 47° 31' 28" LONGITUDE: 66° 34' 29"

UTM COORDINATES: 230907.2 mE, 5269423.0 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: Ramsay Brook, 73.7 km west of Bathurst on Road to Resources Hwy 180, 1.1 km north on old logging road.

GEOLOGICAL UNIT/ROCK TYPE: Dm/Ramsay Brook Gabbro

PREVIOUS WORK/REFERENCES: MP 87-61E

NATURE OF EXPOSURE: side hill GENERAL SITE TOPOGRAPHY: moderate

FACE HEIGHT/EXPOSURE SIZE: 1 m/ 3 m PRESENT LAND USE: Forested

DESCRIPTION:

| | Uniform | Variable |
|---|---|---|
| Colour: Weathered Surface - grey | [X] | [ ] |
| Depth of Weathering 0.5 cm | [X] | [ ] |
| Fresh Surface: | | |
| Dry - dark grey | [X] | [ ] |
| Wet - blue green grey | [X] | [ ] |
| Outcrop Homogeneity | [X] | [ ] |
| Grain Size: | [X] | [ ] |
| Coarse [ ] | | |
| Medium [X] | | |
| Fine [ ] | | |
| Texture | [X] | [ ] |
| Porphyritic [ ] | | |
| Equigranular [X] | | |
| Inequigranular [ ] | | |

Cementing/Integrity: hard

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING
Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 070/90 Spacing 0.7
Secondary: Strike/dip 165/90 Spacing 0.5-2 m
Sheeting: Strike/dip ND Spacing 0.5-0.8 m

ESTIMATED POTENTIAL BLOCK SIZE(m): 0.5 X 1.5 X 0.5

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X ] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [X] | [ ] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: Sulphides Percentage: 2%

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 7-1
Finished No [ ] Yes [X]

Comments: Subcrop to outcrop.
Photo 3
Numerous secondary fractures that will limit block size.
Disseminated sulphides (1-3%) with Fe staining on many faces.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 8-1 OVERALL POTENTIAL: Low

COMMODITY: Granite COLOUR: Black

NTS MAP SHEET: 21 O/07 COUNTY: Northumberland

LATITUDE: 47° 25' 00" LONGITUDE: 56° 31' 42"

UTM COORDINATES: 233854.7 mE, 5257287.2 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 2 km north-northwest of Popple Depot.

GEOLOGICAL UNIT/ROCK TYPE: SEmp/Troctolite

PREVIOUS WORK/REFERENCES: Whalen 1987; Fyffe et al. 1981; Helmstaedt 1971

NATURE OF EXPOSURE: Ridge GENERAL SITE TOPOGRAPHY: moderate-high

FACE HEIGHT/EXPOSURE SIZE: 4 m/10 X 30m PRESENT LAND USE: clearcut

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - grey | [X] | [ ] |
| | Depth of Weathering 0.5 cm | [X] | [ ] |
| | Fresh Surface: | | |
| | Dry - grey black | [ ] | [X] |
| | Wet - blue black | [ ] | [X] |
| Outcrop Homogeneity | | [ ] | [X] |
| Grain Size: | | [ ] | [X] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [ ] | [X] |
| | Porphyritic [ ] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: ND

BEDDING: No [X] Yes [ ] Strike/dip:

Bedding thickness: Average Range

FABRIC: No [ ] Yes [X] Strike/dip: 030/30 NW
Spacing: 2 cm Severity: moderate varies

JOINTING
Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [X]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip ND Spacing
Secondary: Strike/dip ND Spacing
Sheeting: Strike/dip ND Spacing

ESTIMATED POTENTIAL BLOCK SIZE(m): 1.0 X 1.0 X 0.5

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [X] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 8-1
Finished No [ ] Yes [X]

Comments: Outcrop is highly jointed and/or fractured, maximum block size would be 1.0 X 1.0 X 0.5 m.
Sections of outcrop are moderately foliated.
Sample from less foliated area.
Photo 4
Veining is 0.3 cm in width and has scattered spacing.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 8-2 OVERALL POTENTIAL: High

COMMODITY: Granite COLOUR: Black

NTS MAP SHEET: 210/7 COUNTY: Northumberland

LATITUDE: 47° 23' 23" LONGITUDE: 66° 31' 18"

UTM COORDINATES: 234221.9 mE, 5254270.4 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 1.7 km southwest of Popple Depot, Consolidated Bathurst haul road, 39.7 km west of Hwy 430 at Rogers Lake Camp

GEOLOGICAL UNIT/ROCK TYPE: SEmp/Troctolite

PREVIOUS WORK/REFERENCES: ND

NATURE OF EXPOSURE: road side GENERAL SITE TOPOGRAPHY: moderate

FACE HEIGHT/EXPOSURE SIZE: 1 m/3 X 4 m PRESENT LAND USE: road access

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - dark grey | [X] | [ ] |
| | Depth of Weathering 0.5 cm | [X] | [ ] |
| | Fresh Surface: | | |
| | Dry - dark grey | [X] | [ ] |
| | Wet - black | [X] | [ ] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [X] | [ ] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [ ] | | |
| | Inequigranular [X] | | |

Cementing/Integrity: Good

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING

Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 000/90 Spacing 1 m
Secondary: Strike/dip 070/90 Spacing 1.5 m
Sheeting: Strike/dip ND Spacing ND

ESTIMATED POTENTIAL BLOCK SIZE(m): 1.0 X 1.5 X 1.0

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [X] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 8-2
Finished No [ ] Yes [X]

Comments: Good potential.
Photo 5
Took sample from rubble, unable to get sample from smooth outcrop.
Veining is 0.3 cm in size with scattered spacing.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 9-1 OVERALL POTENTIAL: Low

COMMODITY: Granite COLOUR: Black

NTS MAP SHEET: 21 O/08 COUNTY: Northumberland

LATITUDE: 47° 16' 11" LONGITUDE: 66° 29' 36"

UTM COORDINATES: 235761.4 mE, 5240840.1 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 15 km south of Popple Depot, Fraser-Burchhill Road.

GEOLOGICAL UNIT/ROCK TYPE: SEmd/Mount Elizabeth mafic suite

PREVIOUS WORK/REFERENCES: ND

NATURE OF EXPOSURE: road cut GENERAL SITE TOPOGRAPHY: moderate

FACE HEIGHT/EXPOSURE SIZE: 4 m/ 30 m PRESENT LAND USE: road access

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - dark green | [X] | [ ] |
| | Depth of Weathering 0.5 cm | [X] | [ ] |
| | Fresh Surface: | | |
| | Dry - black | [X] | [ ] |
| | Wet - black | [X] | [ ] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [X] | [ ] |
| | Coarse [ ] | | |
| | Medium [ ] | | |
| | Fine [X] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: Good

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING

Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [X]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 065/90 Spacing 15 cm
Secondary: Strike/dip 140/90 Spacing 15 cm
Sheeting: Strike/dip ND Spacing ND

ESTIMATED POTENTIAL BLOCK SIZE(m): 15 cm X 15 cm

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [ ] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [ ] | [X] | [ ] | 1 cm/ND |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 9-1
Finished No [ ] Yes [X]

Comments: Highly fractured, very low potential.
Photo 6

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 9-2 OVERALL POTENTIAL: Low

COMMODITY: Granite COLOUR: Black

NTS MAP SHEET: 21 O/07 COUNTY: Northumberland

LATITUDE: 47° 16' 55" LONGITUDE: 66° 30' 10"

UTM COORDINATES: 235108.2 mE, 5242230.2 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 13 km south of Popple Depot, Fraser-Burchhill Road.

GEOLOGICAL UNIT/ROCK TYPE: SEmd/Mount Elizabeth mafic suite

PREVIOUS WORK/REFERENCES:

NATURE OF EXPOSURE: road cut GENERAL SITE TOPOGRAPHY: moderate

FACE HEIGHT/EXPOSURE SIZE: 2 m/30 m PRESENT LAND USE: road access

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - dark green | [X] | [ ] |
| | Depth of Weathering 0.3 cm | [X] | [ ] |
| | Fresh Surface: | | |
| | Dry - Black | [X] | [ ] |
| | Wet - Black | [X] | [ ] |
| Outcrop Homogeneity | | [ ] | [X] |
| Grain Size: | | [X] | [ ] |
| | Coarse [ ] | | |
| | Medium [ ] | | |
| | Fine [X] | | |
| Texture | | [ ] | [X] |
| | Porphyritic [ ] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: High

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING

Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [X]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip ND Spacing ND
Secondary: Strike/dip ND Spacing ND
Sheeting: Strike/dip ND Spacing ND

ESTIMATED POTENTIAL BLOCK SIZE(m): 15 X 15 X 15 cm

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [ ] Yes [X]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [ ] | [ ] | [X] | 0.1-0.5 m/ |
| Cavities | [X] | [ ] | [ ] | [ ] | numerous |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 9-2
Finished No [ ] Yes [X]

Comments: Highly fractured, very low potential.
Numerous injection veins of late-stage material.
Photo 7

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 9-3 OVERALL POTENTIAL: Low

COMMODITY: Granite COLOUR: Black

NTS MAP SHEET: 21 O/07 COUNTY: Northumberland

LATITUDE: 47° 16' 48" LONGITUDE: 66° 38' 04"

UTM COORDINATES: 235224.5 mE, 5242008.5 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 13.5 km south of Popple Depot, Fraser-Burchill Road

GEOLOGICAL UNIT/ROCK TYPE: SEmd/Mount Elizabeth Mafic Suite

PREVIOUS WORK/REFERENCES: ND

NATURE OF EXPOSURE: outcrop GENERAL SITE TOPOGRAPHY: side of large hill

FACE HEIGHT/EXPOSURE SIZE: 1 m/3 m PRESENT LAND USE: Forested/ road side

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - grey | [ ] | [X] |
| | Depth of Weathering 1 cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - black | [X] | [ ] |
| | Wet - black | [X] | [ ] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [X] | [ ] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: High

BEDDING: No [X] Yes [ ] Strike/dip:

Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [X]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 162/90 Spacing 2-5 cm
Secondary: Strike/dip ND Spacing
Sheeting: Strike/dip ND Spacing

ESTIMATED POTENTIAL BLOCK SIZE(m): 10 $cm^3$

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [X] | [ ] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [X] Yes [ ] Sample Number
Finished No [X] Yes [ ]

Comments: Unable to get a sample because the outcrop was too flat.
All the joints and fractures show alteration and the grain size is greater adjacent to them. Difficult to describe the outcrop because it is flat and small. The rock looked similar to 9-1 but it seemed the mafics were oxidizing quite a lot.
Photo 7

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 10a-1 OVERALL POTENTIAL: Low

COMMODITY: Granite COLOUR: Pinkish-grey

NTS MAP SHEET: 21 O/7 COUNTY: Northumberland

LATITUDE: 47° 18' 20" LONGITUDE: 66° 30' 40"

UTM COORDINATES: 234596.4 mE, 5244882.1 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 2.5 km south of Mount Elizabeth; access along the South Nepisiguit - South Sevogle River Road.

GEOLOGICAL UNIT/ROCK TYPE: SEpg/Biotite Granite

PREVIOUS WORK/REFERENCES: ND

NATURE OF EXPOSURE: road cut GENERAL SITE TOPOGRAPHY: side of hill

FACE HEIGHT/EXPOSURE SIZE: 5 m/30 m PRESENT LAND USE: Forested and road

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - white | [ ] | [X] |
| | Depth of Weathering <2 cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - pink | [X] | [ ] |
| | Wet - pink | [X] | [ ] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [X] | [ ] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: ND

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [ ] Yes [X] Strike/dip: 059/90

Spacing: cm's Severity: low

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 059/90 Spacing <0.5 m
Secondary: Strike/dip 154/90 Spacing 1 m
Sheeting: Strike/dip ND Spacing

ESTIMATED POTENTIAL BLOCK SIZE(m): 1 $m^3$ at this site. Possible potential further in the bush.

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [X] | [ ] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: iron Percentage: ND
biotite

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 10a-1
Finished No [X] Yes [ ]

Comments: Photo 8
Based on blocks in the area, sheeting may be prominent and at approximately 30 cm intervals, difficult to tell in outcrop though.
Weather surface is crumbly.
Unable to get fresh sample, couldn't break it.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 10b-1 OVERALL POTENTIAL: Moderate

COMMODITY: Granite COLOUR: Salmon (pink)

NTS MAP SHEET: 21 O/7 COUNTY: Northumberland

LATITUDE: 47° 19' 38" LONGITUDE: 66° 33' 53"

UTM COORDINATES: 230654.6 mE, 5247473.8 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 9 km SSW of Popple Depot; Access by secondary logging roads off South Nepisiguit - South Sevogle River road.

GEOLOGICAL UNIT/ROCK TYPE: SEag/Alkaline Granite

PREVIOUS WORK/REFERENCES: ND

NATURE OF EXPOSURE: boulders GENERAL SITE TOPOGRAPHY:

FACE HEIGHT/EXPOSURE SIZE: PRESENT LAND USE: clear cut and forested

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - white | [ ] | [ ] |
| | Depth of Weathering ND cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - pink | [ ] | [ ] |
| | Wet - dark pink | [ ] | [ ] |
| Outcrop Homogeneity | | [ ] | [ ] |
| Grain Size: | | [ ] | [ ] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |
| Cementing/Integrity: ND | | | |

BEDDING: No [X] Yes [ ] Strike/dip:

Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip ND Spacing
Secondary: Strike/dip ND Spacing
Sheeting: Strike/dip ND Spacing

ESTIMATED POTENTIAL BLOCK SIZE: ND

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [ ] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [ ] | [ ] | [ ] | |
| Cavities | [ ] | [ ] | [ ] | [ ] | |
| Schlieren | [ ] | [ ] | [ ] | [ ] | |
| Partings | [ ] | [ ] | [ ] | [ ] | |
| Fossils | [ ] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 10b - 1
Finished No [ ] Yes [X]

Comments: There were a lot of boulders of pink granite and presumably the outcrop of these must be below.
The boulders are no bigger than 1 $m^3$
Site is at the crest of a hill.
Some of the smaller boulders are weathered throughout.
Photo 9

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 11-1 OVERALL POTENTIAL: Moderate

COMMODITY: Granite COLOUR: Black

NTS MAP SHEET: 21 O/08 COUNTY: Northumberland

LATITUDE: 47° 16' 20" LONGITUDE: 66° 19' 05"

UTM COORDINATES: 249030.2 mE, 5240538.3 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 2.5 km northwest of Goodwin Lake; access by Highway 430, the Fraser-Burchhill Road and old road along the Northwest Miramichi River.

GEOLOGICAL UNIT/ROCK TYPE: SEmG/Goodwin Lake Gabbro

PREVIOUS WORK/REFERENCES: Paktunc 1988; Whalen 1987, 1988

NATURE OF EXPOSURE: sub-outcrop GENERAL SITE TOPOGRAPHY: River valley

FACE HEIGHT/EXPOSURE SIZE: ND PRESENT LAND USE: ND

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - dark grey | [X] | [ ] |
| | Depth of Weathering 0.5 cm | [X] | [ ] |
| | Fresh Surface: | | |
| | Dry - black | [ ] | [ ] |
| | Wet - black | [ ] | [ ] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [X] | [ ] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: High

BEDDING: No [X] Yes [ ] Strike/dip:

Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING
Pattern: Regular [ ] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip ND Spacing
Secondary: Strike/dip ND Spacing
Sheeting: Strike/dip ND Spacing

ESTIMATED POTENTIAL BLOCK SIZE(m): 1 X 1 X 1

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [X] | [ ] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: sulphides Percentage: 0-1%

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 11-1
Finished No [ ] Yes [X]

Comments: Area has very poor access. The larger pluton, approximately 9 km up river, was not evaluated due to road conditions.
Unit potenital may be restricted by presence of sulphides
Unable to locate a good outcrop exposure

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 12-1 OVERALL POTENTIAL: Moderate

COMMODITY: Granite COLOUR: Pinkish-grey

NTS MAP SHEET: 21 O/01 COUNTY: Northumberland

LATITUDE: 47° 12' 45" LONGITUDE: 66° 22' 40"

UTM COORDINATES: 244225.8 mE, 5234096.4 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 0.5 km northeast of Moose Lake; Access on the Sevogle Airstrip road

GEOLOGICAL UNIT/ROCK TYPE: Sm/Miramichi Granite

PREVIOUS WORK/REFERENCES: ND

NATURE OF EXPOSURE: road cut GENERAL SITE TOPOGRAPHY: crest of a hill

FACE HEIGHT/EXPOSURE SIZE: ND PRESENT LAND USE: Forested

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - white | [ ] | [X] |
| | Depth of Weathering 3 cm | [ ] | [X] rusty |
| | Fresh Surface: | | |
| | Dry - pink | [ ] | [ ] |
| | Wet | [ ] | [ ] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [ ] | [ ] |
| | Coarse [X] | | |
| | Medium [X] seriate | | |
| | Fine [X] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [ ] | | |
| | Inequigranular [X] | | |
| Cementing/Integrity: ND | | | |

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:

Spacing: Severity:

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [X]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 065/90 Spacing 2 m
Secondary: Strike/dip 112/90 Spacing 2 m
Sheeting: Strike/dip 170/15 Spacing > 1 m

ESTIMATED POTENTIAL BLOCK SIZE(m): 1 X 1 X 2

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [ ] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [X] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: Sulphides Percentage: less than 5%
Has a rusty, spotty weathering on the inside.

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 12-1
Finished No [X] Yes [ ]

Comments: Potential block size based on weathered boulders of this unit in the vicinity of the site.
Photo 10 - Site 12-1
Photo 11 - Rubble

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 14a-1 OVERALL POTENTIAL: Moderate

COMMODITY: Granite COLOUR: Grey

NTS MAP SHEET: 21 O/2 COUNTY: Northumberland

LATITUDE: 47° 02' 18" LONGITUDE: 66° 45' 05"

UTM COORDINATES: 215008.1 mE, 5216037.8 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: Gover Mountain, Repap-Miramichi haul road, 5.1 km northwest of intersection with West Branch Little Southwest Miramichi River, 59 km west of Hwy 108.

GEOLOGICAL UNIT/ROCK TYPE: SNg/Biotite Granite

PREVIOUS WORK/REFERENCES: ND

NATURE OF EXPOSURE: road cut GENERAL SITE TOPOGRAPHY: moderate - high

FACE HEIGHT/EXPOSURE SIZE: 2 m/100 X 3m PRESENT LAND USE: road access

| DESCRIPTION: | Uniform | Variable |
|---|---|---|
| Colour: Weathered Surface - grey | [X] | [ ] |
| Depth of Weathering 1 cm | [ ] | [X] |
| Fresh Surface: | | |
| Dry - grey | [X] | [ ] |
| Wet - grey | [X] | [ ] |
| Outcrop Homogeneity | [X] | [ ] |
| Grain Size: | [X] | [ ] |
| Coarse [ ] | | |
| Medium [X] | | |
| Fine [ ] | | |
| Texture | [X] | [ ] |
| Porphyritic [ ] | | |
| Equigranular [X] | | |
| Inequigranular [ ] | | |

Cementing/Integrity: Brittle

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [X]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 020/90 Spacing 0.5-2 m
Secondary: Strike/dip 150/60E Spacing 1-3 m
Sheeting: Strike/dip 000 Spacing 0.1-1 m

ESTIMATED POTENTIAL BLOCK SIZE(m): 2 X 3 X ND

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [X] | [ ] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 14a-1
Finished No [ ] Yes [X]

Comments: Granite appears to be brittle at surface but this may be absent at depth, could indicate potential for problem.
Isolated lenses of bull quartz.
Secondary jointing has a variable dip.
Local pinkish tinge
Photo 12
Photos 16 and 17 display various degrees of deep weathering in scattered areas within this unit.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 14a-2 OVERALL POTENTIAL: Moderate

COMMODITY: Granite COLOUR: Pink

NTS MAP SHEET: 21 O/2 COUNTY: Northumberland

LATITUDE: 47° 03' 20" LONGITUDE: 66° 37' 36"

UTM COORDINATES: 224571.0 mE, 5217504.3 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: Sproule Ridge: 38 km west on the Repap-Miramichi haul road; 4.5 km north on the North Pole Stream road; 11 km northwest on Mitchell Lake road.

GEOLOGICAL UNIT/ROCK TYPE: SNg/North Pole Stream Biotite Granite

PREVIOUS WORK/REFERENCES: ND

NATURE OF EXPOSURE: road side GENERAL SITE TOPOGRAPHY: moderate

FACE HEIGHT/EXPOSURE SIZE: 4m/100 X 10 m PRESENT LAND USE: road access

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - grey | [ ] | [X] |
| | Depth of Weathering 2 cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - pink grey | [ ] | [X] |
| | Wet - pink grey | [ ] | [X] |
| Outcrop Homogeneity | | [ ] | [X] |
| Grain Size: | | [ ] | [X] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [ ] | [X] |
| | Porphyritic [ ] | | |
| | Equigranular [ ] | | |
| | Inequigranular [X] | | |

Cementing/Integrity: Good to fair

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [ ] Yes [X] Strike/dip: 090/80° north
Spacing: 1-2 cm Severity: weak, locally moderate

JOINTING
Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 120/90 Spacing 0.5-2 m
Secondary: Strike/dip 000/90 Spacing 1-2 m
Sheeting: Strike/dip ND Spacing

ESTIMATED POTENTIAL BLOCK SIZE(m): 1 X 2 X ND

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [ ] | [X] | [ ] | [ ] | |
| Veining | [ ] | [X] | [ ] | [ ] | 5 cm/rare |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 14a-2
Finished No [ ] Yes [X]

Comments: Section of wide jointing mixed with sections of intense jointing and increased foliation, with a deeper orange colour.
This rock type at other outcrop displays deep to brittle weathering.
Additional jointing overprints main joint set.
Photo 13

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 14a-3 OVERALL POTENTIAL: Moderate

COMMODITY: Granite COLOUR: Grey

NTS MAP SHEET: 21 O/2 COUNTY: Northumberland

LATITUDE: 47° 01' 17" LONGITUDE: 66° 30' 18"

UTM COORDINATES: 233640.1 mE, 5213286.6 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 3 km south-southeast of Long Lake; 38 km west on Repap-Miramichi haul road from Hwy 108 at McGraw Brook; 7.5 km north on North Pole Brook Road; 1.15 km northwest on Long Lake Road.

GEOLOGICAL UNIT/ROCK TYPE: SNg/North Pole Stream Biotite Granite

PREVIOUS WORK/REFERENCES: ND

NATURE OF EXPOSURE: road side GENERAL SITE TOPOGRAPHY: side hill

FACE HEIGHT/EXPOSURE SIZE: 2 m/50 m PRESENT LAND USE: access road

DESCRIPTION:

| | Uniform | Variable |
|---|---|---|
| Colour: Weathered Surface - grey | [ ] | [X] |
| Depth of Weathering 0.5 cm | [ ] | [X] |
| Fresh Surface: | | |
| Dry - pale pink grey | [X] | [ ] |
| Wet - pale pink grey | [X] | [ ] |
| Outcrop Homogeneity | [ ] | [ ] |
| Grain Size: | [X] | [ ] |
| Coarse [ ] | | |
| Medium [X] | | |
| Fine [ ] | | |
| Texture | [X] | [ ] |
| Porphyritic [ ] | | |
| Equigranular [ ] | | |
| Inequigranular [X] | | |

Cementing/Integrity: Good to fair

Cementing/Integrity: Good to fair

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [ ] Yes [X] Strike/dip: 090/80° west
Spacing: ND Severity: very weak

JOINTING
Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [X]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 040/90 Spacing 0.5-4 m
Secondary: Strike/dip 140/80 E Spacing 2-4 m
Sheeting: Strike/dip ND Spacing ND

ESTIMATED POTENTIAL BLOCK SIZE(m): 2 X 2 X 7

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [ ] | [ ] | [X] | [ ] | 3-10 cm/0.5-1 m |
| Veining | [X] | [ ] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 14a-3
Finished No [ ] Yes [X]

Comments: Outcrop jointing overprinted by an additional joint pattern but still has area with large blocks.
The amount of xenoliths may create a problem.
Photo 14

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 14a-4 OVERALL POTENTIAL: Moderate

COMMODITY: Granite COLOUR: Pink

NTS MAP SHEET: 21 O/1 COUNTY: Northumberland

LATITUDE: 47° 09' 40" LONGITUDE: 66° 26' 05"

UTM COORDINATES: 239662.8 mE, 5228574.6 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 4 km south of Big Bald Mountain; access by the main South Nepisiguit - South Sevogle River Road.

GEOLOGICAL UNIT/ROCK TYPE: SNg/North Pole Stream Biotite Granite

PREVIOUS WORK/REFERENCES: ND

NATURE OF EXPOSURE: roadside ditch

GENERAL SITE TOPOGRAPHY: flat area in the middle of a 1 km long hill

FACE HEIGHT/EXPOSURE SIZE: 150 m X 10 m

PRESENT LANDUSE: Forested and road

DESCRIPTION:

| | Uniform | Variable |
|---|---|---|
| Colour: Weathered Surface - white | [ ] | [ ] |
| Depth of Weathering 2 cm | [ ] | [X] |
| Fresh Surface: | | |
| Dry - Pink | [ ] | [ ] |
| Wet | [ ] | [ ] |
| Outcrop Homogeneity | [X] | [ ] |
| Grain Size: | [ ] | [ ] |
| Coarse [X] | | |
| Medium [ ] medium to coarse-grained | | |
| Fine [ ] | | |
| Texture | [ ] | [ ] |
| Porphyritic [ ] | | |
| Equigranular [X] all mafics are fine grained | | |
| Inequigranular [ ] quartz and feldspar same size | | |

Cementing/Integrity: ND

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [ ] Yes [X ] Strike/dip: Horizontal
Spacing: cm's Severity:

JOINTING
Pattern: Regular [X ] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 138/85 Spacing 1 m or more
Secondary: Strike/dip 45/80 Spacing 10 cm to >3m
Sheeting: Strike/dip ND Spacing variable

ESTIMATED POTENTIAL BLOCK SIZE:

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [X] | [ ] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: sulphides Percentage:
(possibly magnetite)and iron biotite

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 14a-4
Finished No [ ] Yes [X]

Comments: There is a noticeable but very gradual change from white to pink over the whole outcrop. Generally though it is very homogeneous.
Photo 15 looking towards the hill and Site 14a-4.
Sample 14a-5 was taken down the road for comparison, however the outcrop at 14a-5 was very friable and crumbly.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 14a-5 OVERALL POTENTIAL: Low

COMMODITY: Granite COLOUR: Pink

NTS MAP SHEET: 21 O/1 COUNTY: Northumberland

LATITUDE: 47° 11' 00" LONGITUDE: 66° 27' 08"

UTM COORDINATES: 238445.8 mE,5231102.4 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 2.5 km southwest of Big Bald Mountain on the main South Nepisiguit-South Sevogle River road

GEOLOGICAL UNIT/ROCK TYPE: SNg/North Pole Stream Biotite Granite

PREVIOUS WORK/REFERENCES: ND

NATURE OF EXPOSURE: GENERAL SITE TOPOGRAPHY:

FACE HEIGHT/EXPOSURE SIZE: PRESENT LAND USE:

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - white | [X] | [ ] |
| | Depth of Weathering cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - pink | [ ] | [X] |
| | Wet - pink | [ ] | [X] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [X] | [ ] |
| | Coarse [X] | | |
| | Medium [ ] | | |
| | Fine [ ] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: Fair to poor

BEDDING: No [X] Yes [ ] Strike/dip:

Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip ND Spacing ND
Secondary: Strike/dip ND Spacing ND
Sheeting: Strike/dip ND Spacing ND

ESTIMATED POTENTIAL BLOCK SIZE: ND

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [X] | [ ] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 14a-5
Finished No [ ] Yes [X]

Comments: Deeply weathered, friable to crumbly.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 14d-1 OVERALL POTENTIAL: High

COMMODITY: Granite COLOUR: Grey

NTS MAP SHEET: 21 O/1 COUNTY: Northumberland

LATITUDE: 47° 07' 00" LONGITUDE: 66° 19' 35"

UTM COORDINATES: 247662.9 mE, 5223280.6 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 11 km north of Mullin Stream Lake; 2.5 km on a branch off the Main South Nepisiguit-South Sevogle River road

GEOLOGICAL UNIT/ROCK TYPE: SNgd/North Pole Stream Granodiorite

PREVIOUS WORK/REFERENCES: ND

NATURE OF EXPOSURE: Bulldozed outcrop GENERAL SITE TOPOGRAPHY: side of hill sloping 25°

FACE HEIGHT/EXPOSURE SIZE: 15 m X 25m PRESENT LAND USE: Forested

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - cream | [ ] | [X] |
| | Depth of Weathering <0.5 cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - light grey | [X] | [ ] |
| | Wet - dark grey | [X] | [ ] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [ ] | [X] |
| | Coarse [X] | | |
| | Medium [X] fine to coarse | | |
| | Fine [X] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [X] | | |
| | Equigranular [ ] | | |
| | Inequigranular [X] | | |

Cementing/Integrity: ND

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: ND Severity:

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [X]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 000/90 Spacing 3-5 m
Secondary: Strike/dip 060/90 Spacing > 1 m
Sheeting: Strike/dip horizontal Spacing ND

ESTIMATED POTENTIAL BLOCK SIZE(m): 4 X 4 X 4 if sheeting is not a problem

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X ] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [ ] | [ ] | [ ] | [X] | |
| Veining | [X] | [ ] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 14d-1
Finished No [ ] Yes [X]

Comments: There are several large cleared outcrops more than 100 metres along the road.
Size/Spacing of xenoliths 1-5 cm/20 per $m^2$
Photos 18 to 21

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 14d-2 OVERALL POTENTIAL: Moderate

COMMODITY: Granite COLOUR: Grey

NTS MAP SHEET: 21 O/01 COUNTY: Northumberland

LATITUDE: 47° 09' 30" LONGITUDE: 66° 22' 15"

UTM COORDINATES: 244491.6 mE, 5228054.9 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 3.5 km southwest of Slacks Lake, the main South Nepisiguit-South Sevogle River road and several logging roads

GEOLOGICAL UNIT/ROCK TYPE: SNgd/North Pole Stream Granodiorite

PREVIOUS WORK/REFERENCES: Whalen 1987, 1988; Irrinki 1986

NATURE OF EXPOSURE: road side GENERAL SITE TOPOGRAPHY: moderate

FACE HEIGHT/EXPOSURE SIZE: ND PRESENT LAND USE: ND

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - cream | [ ] | [X] |
| | Depth of Weathering 1.5 cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - light grey | [X] | [ ] |
| | Wet - dark grey | [X] | [ ] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [ ] | [X] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [X] | | |
| | Equigranular [ ] | | |
| | Inequigranular [X] | | |

Cementing/Integrity: ND

BEDDING: No [X] Yes [ ] Strike/dip:

Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: ND Severity:

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [X]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip N/D Spacing
Secondary: Strike/dip N/D Spacing
Sheeting: Strike/dip N/D Spacing

ESTIMATED POTENTIAL BLOCK SIZE(m): 4 X 4 X 4

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [ ] | [ ] | [X] | [ ] | |
| Veining | [X] | [ ] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: Biotite Percentage: 5-10%

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 14d-2
Finished No [ ] Yes [X]

Comments: Iron staining in weathered zone.
Sample taken from sub-outcrop.
Very similar to 14d-1.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 14e-1 OVERALL POTENTIAL: Low

COMMODITY: Black Granite COLOUR: Black

NTS MAP SHEET: 21 O/2 COUNTY: Northumberland

LATITUDE: 47° 01' 10" LONGITUDE: 66° 35' 20"

UTM COORDINATES: 227255.7 mE, 5213359.6 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: Little North Pole Brook, 30 km northwest on Repap-Miramichi haul road from Hwy 108 at McGraw Brook; 4.5 km north and 6.35 km northwest on Mitchell Lake road

GEOLOGICAL UNIT/ROCK TYPE: SNd/North Pole Stream - Mafic Suite

PREVIOUS WORK/REFERENCES: ND

NATURE OF EXPOSURE: road side GENERAL SITE TOPOGRAPHY: flat

FACE HEIGHT/EXPOSURE SIZE: 1 m/30 X 20 m PRESENT LAND USE: road access

DESCRIPTION:

| | Uniform | Variable |
|---|---|---|
| Colour: Weathered Surface - dark grey | [X] | [ ] |
| Depth of Weathering 1 cm | [X] | [ ] |
| Fresh Surface: | | |
| Dry - dark grey | [ ] | [X] |
| Wet - black | [ ] | [X] |
| Outcrop Homogeneity | [ ] | [X] |
| Grain Size: | [ ] | [X] |
| Coarse [ ] | | |
| Medium [X] | | |
| Fine [ ] | | |
| Texture | [ ] | [ ] |
| Porphyritic [ ] | | |
| Equigranular [X] | | |
| Inequigranular [ ] | | |

Cementing/Integrity: Very good

BEDDING: No [X] Yes [ ] Strike/dip:

Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: ND Severity:

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 030/85 Spacing 1 m
Secondary: Strike/dip 120/85 Spacing 1 m
Sheeting: Strike/dip Spacing

ESTIMATED POTENTIAL BLOCK SIZE(m): 1 X 1 X 1

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [ ] | [ ] | [X] | [ ] | 0.3 m/1-10 m |
| Veining | [ ] | [ ] | [ ] | [X] | dykes/1-4 m |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: Nil

Sample: Collected No [ ] Yes [X] Sample Number 14e-1
Finished No [ ] Yes [X]

Comments: Rock could have potential if an outcrop could be found without the dyke swarms.
Photo 22
Dyke swarms evident in outcrop over a large area.
One area just north of Repap-Miramichi haul road may have more potential.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 21-1 OVERALL POTENTIAL: Low

COMMODITY: Granite COLOUR: Pink-orange

NTS MAP SHEET: 21 J/15 COUNTY: Northumberland

LATITUDE: 46° 46' 10" LONGITUDE: 66° 35' 25"

UTM COORDINATES: 225877.6 mE, 5185587.0 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 6 km north northwest of Harris Lake; a main logging 2.5 km south of the Plaster Rock-Renous Road.

GEOLOGICAL UNIT/ROCK TYPE: DMf Dungarvon Granite

PREVIOUS WORK/REFERENCES: ND

NATURE OF EXPOSURE: Bulldozed outcrop GENERAL SITE TOPOGRAPHY: side of gentle hill

FACE HEIGHT/EXPOSURE SIZE: ND/15 m X 10 m PRESENT LAND USE: Forested

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface ND | [X] | [ ] |
| | Depth of Weathering 1 cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - pink | [ ] | [X] |
| | Wet - pink | [ ] | [X] |
| Outcrop Homogeneity | | [ ] | [X] |
| Grain Size: | | [X] | [ ] |
| | Coarse [X] | | |
| | Medium [ ] | | |
| | Fine [ ] | | |
| Texture | | [ ] | [X] |
| | Porphyritic [ ] | | |
| | Equigranular [ ] | | |
| | Inequigranular [X] | | |

Cementing/Integrity: Low

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: ND Severity:

JOINTING
Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [X]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 355/80E Spacing <0.5 m
Secondary: Strike/dip 035/90 Spacing <0.5 m
Sheeting: Strike/dip Spacing

ESTIMATED POTENTIAL BLOCK SIZE(m): < 1 $m^3$

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [ ] | [X] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 21-1
Finished No [X] Yes [ ]

Comments: This is a representative outcrop along a road with several scattered over 300 m or more. All are slightly different in colour, some are white, also grain sizes are variable. At this outcrop slickensides were found on some fracture planes.
Photos 23 and 24.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 21-2 OVERALL POTENTIAL: Low

COMMODITY: Granite COLOUR: Pink

NTS MAP SHEET: 21 J/10 COUNTY: Northumberland

LATITUDE: 46° 44' 59" LONGITUDE: 66° 35' 30"

UTM COORDINATES: 225671.4 mE, 5183400.6 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 4.5 km northwest of Harris Lake; main logging road west of the road between Holtville and the Plaster Rock-Renous Road

GEOLOGICAL UNIT/ROCK TYPE: DMf/Dungarvon granite

PREVIOUS WORK/REFERENCES: ND

NATURE OF EXPOSURE: Bulldozed outcrop beside road GENERAL SITE TOPOGRAPHY: ND

FACE HEIGHT/EXPOSURE SIZE: 10 $m^2$ PRESENT LAND USE: Forested

DESCRIPTION:

| | Uniform | Variable |
|---|---|---|
| Colour: Weathered Surface ND | [ ] | [X] |
| Depth of Weathering <1 cm | [ ] | [X] |
| Fresh Surface: | | |
| Dry - Pink | [ ] | [X] |
| Wet | [ ] | [X] |
| Outcrop Homogeneity | [ ] | [X] |
| Grain Size: | [ ] | [X] |
| Coarse [ ] | | |
| Medium [X] | | |
| Fine [ ] | | |
| Texture | [ ] | [X] |
| Porphyritic [X] | | |
| Equigranular [ ] | | |
| Inequigranular [ ] | | |

Cementing/Integrity: Poor

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [ ] Yes [X] Strike/dip:
Spacing: Horizontal Severity: High

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 115/90 Spacing >1.5 m
Secondary: Strike/dip 145/90 Spacing >0.25 m
Sheeting: Strike/dip Horizontal Spacing 2 cm

ESTIMATED POTENTIAL BLOCK SIZE(m): Difficult to say, very small unless sheeting changes at depth

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [X] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: Percentage:
Biotites are weathering rusty and are medium grained

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 21-2 sample of fine grained porphyry 21-2a

Finished No [X] Yes [ ]

Comments: In places it is porphyritic, others not.
Also somewhat rapakivi textured.
The fine-grained rock beside or intruding is more competent and fractures into blocks (approximately 10 cm square.)
Photos 25 and 26.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 23-1 OVERALL POTENTIAL: Low

COMMODITY: Granite COLOUR: Black

NTS MAP SHEET: 21 J/6 COUNTY: Carleton

LATITUDE: 46° 24' 30" LONGITUDE: 67° 12' 20"

UTM COORDINATES: 637925.5 mE, 5140764.1 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 4 km east southeast of Brighton Mountain, 1 km south of West Branch of Nashwaak River. Highway 107, old Nashwaak River road and logging roads.

GEOLOGICAL UNIT/ROCK TYPE: Dm/Gabbro

PREVIOUS WORK/REFERENCES: MR 61-4 Lutes

NATURE OF EXPOSURE: road cut GENERAL SITE TOPOGRAPHY: moderate side hill

FACE HEIGHT/EXPOSURE SIZE: 2 m/100 m PRESENT LAND USE: access road

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface -light grey | [X] | [ ] |
| | Depth of Weathering 0.3 cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - grey | [ ] | [X] |
| | Wet - dark grey | [ ] | [X] |
| Outcrop Homogeneity | | [ ] | [X] |
| Grain Size: | | [X] | [ ] |
| | Coarse [ ] | | |
| | Medium [ ] | | |
| | Fine [X] | | |
| Texture | | [ ] | [X] |
| | Porphyritic [ ] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: Good

BEDDING: No [ ] Yes [X] Strike/dip: Sub-horizontal
Bedding thickness: Average ND Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: ND Severity:

JOINTING
Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [X]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip ND Spacing ND
Secondary: Strike/dip ND Spacing ND
Sheeting: Strike/dip ND Spacing ND

ESTIMATED POTENTIAL BLOCK SIZE(m): 0.5 X 0.5 X 0.5

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [ ] | [X] | [ ] | [ ] | 2 X 3 cm/ND |
| Veining | [X] | [ ] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 23-1
Finished No [X] Yes [ ]

Comments: This unit is highly fractured and has low potential for building stone use. Pink (feldspar) alteration is present on some fracture faces. It is overlain by a medium- to coarse-grained black gabbro sill (23-1b) that is locally deeply weathered with abundant Fe staining.
Photo 27
300 m west found a large outcrop of the sill. At this location it has a honey black colour, and is medium to coarse grained and highly jointed.
Photo 28

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 24-1 OVERALL POTENTIAL: Moderate

COMMODITY: Granite COLOUR: Grey

NTS MAP SHEET: 21 J/6 COUNTY: York

LATITUDE: 46° 25' 05" LONGITUDE: 67° 05' 35"

UTM COORDINATES: 646546.3 mE, 5142046.7 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 5 km south-southwest of Nashwaak Lake logging road south from Deersdale about 10 km; 15.1 km north on logging road from Napadogan road; 2.8 km east of Nashwaak River; just north of West Branch Napadogan Brook

GEOLOGICAL UNIT/ROCK TYPE: Df3/Biotite Granite

PREVIOUS WORK/REFERENCES: MR 81-4 Lutes

NATURE OF EXPOSURE: knoll top GENERAL SITE TOPOGRAPHY: rolling hills

FACE HEIGHT/EXPOSURE SIZE: ND/10 m X 5 m PRESENT LAND USE: clear cut

DESCRIPTION:

| | | Uniform | Variable |
|---|---|---|---|
| Colour: Weathered Surface ND | | [ ] | [X] |
| Depth of Weathering 5-6 cm | | [ ] | [X] |
| Fresh Surface: | | | |
| | Dry - white | [X] | [ ] |
| | Wet - light grey | [X] | [ ] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [X] | [ ] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: Good in fresh material

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [X]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 015/75W Spacing ~2 m
Secondary: Strike/dip 110/65N Spacing ~1 m
Sheeting: Strike/dip 125/12S Spacing ND

ESTIMATED POTENTIAL BLOCK SIZE(a): 1 X 2 X 1

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [ ] | [ ] | [X] | [ ] | |
| Veining | [X] | [ ] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: Biotite Percentage: 5-10%

Potential Use: Rip Rap

Sample: Collected No [ ] Yes [X] Sample Number 24-1
Finished No [ ] Yes [X]

Comments: Scattered xenoliths ~ 2 cm maximum
Biotite appears to be deeply weathered and brownish.
Unable to get a large fresh sample from outcrop - took sample from rubble 100 m west on main road.
Photo 29
Additional outcrop of same rock further west on old logging road.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 24-2 OVERALL POTENTIAL: Moderate

COMMODITY: Granite COLOUR: Grey

NTS MAP SHEET: 21 J/6 COUNTY: York

LATITUDE: 46° 22' 28" LONGITUDE: 67° 07' 00"

UTM COORDINATES: 644847.2 mE, 5137157.5 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 2 km northeast of Darker Lake; north of East Brook; 5 km southeast on logging road; 300 m east of intersection of Nashwaak River and Deersdale - old Nashwaak River road.

GEOLOGICAL UNIT/ROCK TYPE: Df3/Granite

PREVIOUS WORK/REFERENCES: MR-81-4 Lutes

NATURE OF EXPOSURE: side hill GENERAL SITE TOPOGRAPHY: rolling hills

FACE HEIGHT/EXPOSURE SIZE: ND/20 m X 20 m H PRESENT LAND USE: clear cut

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface nd | [X] | [ ] |
| | Depth of Weathering 2 cm | [ ] | [ ] |
| | Fresh Surface: | | |
| | Dry - yellow grey | [X] | [ ] |
| | Wet - grey | [X] | [ ] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [X] | [ ] |
| | Coarse [ ] | | |
| | Medium [ ] | | |
| | Fine [X] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [ ] | | |
| | Inequigranular [X] | | |

Cementing/Integrity: Good

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [ ] Yes [X] Strike/dip: ND
Spacing: ND Severity: Very weak

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 150/75W Spacing 1 m+
Secondary: Strike/dip 050/80N Spacing 0.5-1 m
Sheeting: Strike/dip 000/10E Spacing 0.5-1

ESTIMATED POTENTIAL BLOCK SIZE(m): 1.5 X 1 X 1

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [X] | [ ] | [ ] | 070/40 S - Dyke |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: Biotite Percentage: 15%

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 24-2
Finished No [ ] Yes [X]

Comments: Dyke of fine-grained pink granite 8-15 cm wide
Joint spacing varies along outcrop.
Area has abundant boulders (many 1 X 1 X 1 metres plus)
along this ridge.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 24-3 OVERALL POTENTIAL: Low

COMMODITY: Granite COLOUR: Grey

NTS MAP SHEET: 21 J/6 COUNTY: Carleton

LATITUDE: 46° 25' 09" LONGITUDE: 67° 10' 45"

UTM COORDINATES: 639926.0 mE, 5142014.2 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: West Branch Nashwaak River, 2.4 km northwest of intersection of Nashwaak River and Deersdale - old Nashwaak River Road.

GEOLOGICAL UNIT/ROCK TYPE: Df3/Granite

PREVIOUS WORK/REFERENCES: None

NATURE OF EXPOSURE: edge of road GENERAL SITE TOPOGRAPHY: low

FACE HEIGHT/EXPOSURE SIZE: 2.5 m/ND PRESENT LAND USE: ND

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - white | [X] | [ ] |
| | Depth of Weathering 1-3 cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - cream | [X] | [ ] |
| | Wet - cream | [X] | [ ] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [X] | [ ] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [ ] | | |
| | Inequigranular [X] | | |

Cementing/Integrity: ND

BEDDING: No [X] Yes [ ] Strike/dip:

Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 125/65S Spacing 0.5-1.5
Secondary: Strike/dip 060/55N Spacing 0.51.5
Sheeting: Strike/dip 030/105W Spacing ND

ESTIMATED POTENTIAL BLOCK SIZE(m): 1 X 1 X 0.5

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [ ] | [X] | [ ] | <1 cm 0.5-1 m |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 24-3
Finished No [X] Yes [ ]

Comments: Quartz veins within joint planes and crossing joints.
- some joints are rusty.
- locally intense jointing
- minor iron staining
Photo 30

# SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 24-4 OVERALL POTENTIAL: Low

COMMODITY: Granite COLOUR: Pink

NTS MAP SHEET: 21 J/6 COUNTY: Carleton

LATITUDE: 46° 25' 08" LONGITUDE: 67° 10' 11"

UTM COORDINATES: 640652.5 mE, 5142000.1 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: In clear cut 1 km east of intersection of logging road and West Branch of Nashwaak River, 2 km northwest of intersection of Nashwaak River and Deersdale - old Nashwaak River road.

GEOLOGICAL UNIT/ROCK TYPE: Df3/Granite

PREVIOUS WORK/REFERENCES: MR 81-4 Lutes; Whalen Sample 174

NATURE OF EXPOSURE: ledge GENERAL SITE TOPOGRAPHY: moderate

FACE HEIGHT/EXPOSURE SIZE: 4 m/30m X 15 m PRESENT LAND USE: Reforested

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - pink | [ ] | [X] |
| | Depth of Weathering 3-4 cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - pink | [ ] | [X] |
| | Wet - pink | [ ] | [X] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [X] | [ ] |
| | Coarse [X] | | |
| | Medium [ ] | | |
| | Fine [ ] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [ ] | | |
| | Inequigranular [X] | | |

Cementing/Integrity: ND

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING
Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 040/55W Spacing 0.5-1 m
Secondary: Strike/dip 135/170N Spacing 0.5 m
Sheeting: Strike/dip ND Spacing 1-2 m

ESTIMATED POTENTIAL BLOCK SIZE(m): 1 X 2 X 0.5

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [X] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [X] Yes [ ] Sample Number
Finished No [X] Yes [ ]

Comments: Outcrop on both sides of a small ravine.
Pink colour restricted in overall area.
Veining is 0.5 cm in size and spacing is scattered.
Photo 31.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 24-5 OVERALL POTENTIAL: Low

COMMODITY: Granite COLOUR: Pink

NTS MAP SHEET: 21 J/7 COUNTY: Carleton

LATITUDE: 46° 26' 48" LONGITUDE: 67° 09' 48"

UTM COORDINATES: 641077.5 mE, 5144851.0 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 4 km southwest of Nashwaak Lake, 6.4 km northwest and north on old road from intersetion of Nashwaak River and the Deersdale - Nashwaak River road, 1.1 km southeast into clear cut.

GEOLOGICAL UNIT/ROCK TYPE: Df3/Granite

PREVIOUS WORK/REFERENCES: MR 81-4 Lutes

NATURE OF EXPOSURE: fault valley GENERAL SITE TOPOGRAPHY: flat

FACE HEIGHT/EXPOSURE SIZE: 3 m X 150 m PRESENT LAND USE: Forestry

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - pink | [ ] | [X] |
| | Depth of Weathering cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - orange | [ ] | [X] |
| | Wet - orange | [ ] | [X] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [ ] | [ ] |
| | Coarse [X] | | |
| | Medium [ ] | | |
| | Fine [ ] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |
| Cementing/Integrity: ND | | | |

BEDDING: No [X] Yes [ ] Strike/dip:

Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING
Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [X]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 020/80W Spacing 0.1-0.5 m
Secondary: Strike/dip 090/80N Spacing 0-0.5m
Sheeting: Strike/dip 000 Spacing 1 m

ESTIMATED POTENTIAL BLOCK SIZE(m): ND

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [X] | [ ] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 24-5
Finished No [X] Yes [ ]

Comments: Areas deeply weathered and/or highly fractured. Colour and degree of fracturing may be due to fault in the valley.
Photo 32

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 29a-1 OVERALL POTENTIAL: Moderate

COMMODITY: Granite COLOUR: Grey

NTS MAP SHEET: 21 G/14 COUNTY: York

LATITUDE: 45° 51' 00" LONGITUDE: 67° 17' 07"

UTM COORDINATES: 633136.7 mE, 5078593.5 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [ ] FREEHOLD [X]

LOCATION AND ACCESS: 1.5 km northeast of Shogomoc Lake, 13.5 km southwest on Ste. Anne-Nackawic hauling road from TCH at the Pokiok Irving Station

GEOLOGICAL UNIT/ROCK TYPE: Hem (Df4)

PREVIOUS WORK/REFERENCES: Lutes RI 22

NATURE OF EXPOSURE: road side GENERAL SITE TOPOGRAPHY: knoll moderate

FACE HEIGHT/EXPOSURE SIZE: 2-3 m/30 X 20 m PRESENT LAND USE: road access

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - buff grey | [X] | [ ] |
| | Depth of Weathering 0.5 cm | [X] | [ ] |
| | Fresh Surface: | | |
| | Dry - grey | [X] | [ ] |
| | Wet - medium grey | [X] | [ ] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [X] | [ ] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: good

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING
Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 060/85 Spacing 0.5-1.5 m
Secondary: Strike/dip 020/90 Spacing 1.0 m
Sheeting: Strike/dip ND Spacing ND

ESTIMATED POTENTIAL BLOCK SIZE(m): 2 X 1 X 0.5

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [X] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: Biotite Percentage: > 5%

Potential Use:

Sample: Collected No [ ] Yes [X] Sample Number 29a-1
Finished No [ ] Yes [X]

Comments: Lutes' sample location 110. Disruptive joint patterns vary in density over the area.
500 m west similar exposure with sheeting 2 m thick plus.
Photo 35

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 29a-2 OVERALL POTENTIAL: Moderate

COMMODITY: Granite COLOUR: Pink

NTS MAP SHEET: 21 J/6 COUNTY: York

LATITUDE: 46° 15' 28" LONGITUDE: 67° 01' 35"

UTM COORDINATES: 652113.4 mE, 5124364.0 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 400 m north of intersection of Napadogan road and Keswick River

GEOLOGICAL UNIT/ROCK TYPE: Hem/Allandale Granite

PREVIOUS WORK/REFERENCES: Lutes RI-22, MR 81-4

NATURE OF EXPOSURE: road cut GENERAL SITE TOPOGRAPHY: low moderate

FACE HEIGHT/EXPOSURE SIZE: nd/2 m X 8 m PRESENT LAND USE: logging road

DESCRIPTION:

| | Uniform | Variable |
|---|---|---|
| Colour: Weathered Surface | [X] | [ ] |
| Depth of Weathering 0.5 cm | [X] | [ ] |
| Fresh Surface: | | |
| Dry - orange | [X] | [ ] |
| Wet - grey-orange | [X] | [ ] |
| Outcrop Homogeneity | [X] | [ ] |
| Grain Size: | [X] | [ ] |
| Coarse [ ] | | |
| Medium [ ] | | |
| Fine [X] | | |
| Texture | [X] | [ ] |
| Porphyritic [ ] | | |
| Equigranular [X] | | |
| Inequigranular [ ] | | |

Cementing/Integrity: ND

BEDDING: No [X] Yes [ ] Strike/dip:

Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING
Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 015/75W Spacing 0.5-1m
Secondary: Strike/dip 100/80S Spacing 0.5-1m
Sheeting: Strike/dip ND Spacing 1-2 m

ESTIMATED POTENTIAL BLOCK SIZE: ND

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [ ] Yes [X]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [X] | [ ] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 29a-2
Finished No [ ] Yes [X]

Comments: Extensive fractures probably due to blasting.
Local float up to 1.5 X 1.5 m.
- area partially clear cut
- some iron oxide on fractures
- Photo 36

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 29b-2 OVERALL POTENTIAL: Moderate

COMMODITY: Granite COLOUR: Grey

NTS MAP SHEET: 21 G/11 COUNTY: York

LATITUDE: 45° 44' 03" LONGITUDE: 67° 28' 55"

UTM COORDINATES: 618111.4 mE, 5065415.1 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [ ] FREEHOLD [X]

LOCATION AND ACCESS: 20 km northwest of McAdam on highway 630

GEOLOGICAL UNIT/ROCK TYPE: Hpg/Hawkshaw Granodiorite

PREVIOUS WORK/REFERENCES: ND

NATURE OF EXPOSURE: GENERAL SITE TOPOGRAPHY: Forested

FACE HEIGHT/EXPOSURE SIZE: 100 X 20m/ 30 X 5-8m PRESENT LAND USE: ND

DESCRIPTION:

| | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface | [X] | [ ] |
| | Depth of Weathering 0.5 cm | [X] | [ ] |
| | Fresh Surface: | | |
| | Dry - grey | [X] | [ ] |
| | Wet - ND | [ ] | [ ] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [ ] | [ ] |
| | Coarse [X] | | |
| | Medium [ ] | | |
| | Fine [ ] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: ND

BEDDING: No [X] Yes [ ] Strike/dip:

Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 018/90 Spacing 1 m
Secondary: Strike/dip 100/90 Spacing 1.5 m
Sheeting: Strike/dip 020/50W Spacing >0.8 m

ESTIMATED POTENTIAL BLOCK SIZE(m): $2m^3$ at the most

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [ ] | [X] | [ ] | [ ] | |
| Veining | [X] | [ ] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 29-2
Finished No [ ] Yes [X]

Comments: Outcrop lichen and moss covered, blocks have broken off the outcrop and are greater than $2m^3$ in some cases. This unit has potential for large blocks; however, it is probably too coarse-grained and the biotites are quite large.
Xenolith size is 5-15 cm. Maximum spacing is 2 per $m^2$.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 30a-1 OVERALL POTENTIAL: Moderate

COMMODITY: Granite COLOUR: Pink

NTS MAP SHEET: 21 G/12 COUNTY: York

LATITUDE: 45° 41' 30" LONGITUDE: 67° 30' 48"

UTM COORDINATES: 615757.0 mE, 5060647.5 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [ ] FREEHOLD [X]

LOCATION AND ACCESS: 6 km southwest of Sixth Lake; bush road off logging road just west of Hwy 630

GEOLOGICAL UNIT/ROCK TYPE: Seb/Skiff Lake Granite

PREVIOUS WORK/REFERENCES: Lutes 1987

NATURE OF EXPOSURE: outcrop GENERAL SITE TOPOGRAPHY: side of hill

FACE HEIGHT/EXPOSURE SIZE: 40 m X 15 m PRESENT LAND USE: Forested

DESCRIPTION:

| | Uniform | Variable |
|---|---|---|
| Colour: Weathered Surface | [X] | [ ] |
| Depth of Weathering <0.5 cm | [X] | [ ] |
| Fresh Surface: | | |
| Dry - pinkish-grey | [ ] | [X] |
| Wet - grey | [ ] | [X] |
| Outcrop Homogeneity | [X] | [ ] |
| Grain Size: | [ ] | [X] |
| Coarse [X] | | |
| Medium [X] | | |
| Fine [ ] | | |
| Texture | [ ] | [ ] |
| Porphyritic [X] pink | | |
| Equigranular [ ] | | |
| Inequigranular [X] (ground mass varied from medium to coarse) | | |

Cementing/Integrity: ND

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING
Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 018/90 Spacing
Secondary: Strike/dip Spacing
Sheeting: Strike/dip Spacing

ESTIMATED POTENTIAL BLOCK SIZE(m): 1 $m^3$ at surface

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [ ] | [X] | [ ] | [ ] | |
| Veining | [ ] | [ ] | [X] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 30a-1
Finished No [ ] Yes [X]

Comments: The texture is porphyritic and the groundmass varies from medium to coarse grained.
It is only pink due to a few pink feldspars, otherwise it is very similar to 30a-2.
The unit, if colour is acceptable, has potential for large blocks.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 30a-2 OVERALL POTENTIAL: Moderate

COMMODITY: Granite COLOUR: Grey

NTS MAP SHEET: 21 G/12 COUNTY: York

LATITUDE: 45° 41' 45" LONGITUDE: 67° 30' 50"

UTM COORDINATES: 615705.1 mE, 5061109.6 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [ ] FREEHOLD [X]

LOCATION AND ACCESS: 6 km southwest of Sixth Lake; by bush road off main logging road just west of Hwy 630

GEOLOGICAL UNIT/ROCK TYPE: Seb/Skiff Lake Granite

PREVIOUS WORK/REFERENCES: Lutes 1987

NATURE OF EXPOSURE: road ditch GENERAL SITE TOPOGRAPHY: flat but close to the edge of a gentle hill

FACE HEIGHT/EXPOSURE SIZE: ND/120 m X 5 m PRESENT LAND USE: Forested

DESCRIPTION:

| | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface | [ ] | [X] |
| | Depth of Weathering 1 cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - light grey | [X] | [ ] |
| | Wet - dark grey | [X] | [ ] |
| Outcrop Homogeneity | | [ ] | [X] |
| Grain Size: | | [X] | [ ] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [X] | | |
| | Equigranular [ ] | | |
| | Inequigranular [X] | | |

Cementing/Integrity: ND

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [X] occasionally moderate, but generally widely spaced

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 075/90 Spacing >50 cm
Secondary: Strike/dip 110/90 Spacing >50 cm
Sheeting: Strike/dip Spacing

ESTIMATED POTENTIAL BLOCK SIZE: ND

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [ ] | [X] | [ ] | [ ] | 10 cm/ND |
| Veining | [ ] | [X] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: pyrite Percentage: <1%

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 30-2a south end
Finished No [ ] Yes [X] Sample Number 30-2b north end

Comments: Spacing of joints is most prominent in the centre of the outcrop. In the north end, it is quite sparse with spacing >1.5 m.
A large outcrop in a ditch. Two samples were taken, one from the north end and one from the south end.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 37a-1 and 37b-1 OVERALL POTENTIAL: Low

COMMODITY: Granite COLOUR: Pink and white

NTS MAP SHEET: 21 G/07 COUNTY: Charlotte

LATITUDE: 45° 22' 55" LONGITUDE: 66° 46' 15"

UTM COORDINATES: 204775.7 mE, 5032083.6 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: South of Mount Pleasant, Highway 1 and Mount Pleasant mine road.

GEOLOGICAL UNIT/ROCK TYPE: Djl/MacDougall Lake Granite

PREVIOUS WORK/REFERENCES: McLeod 1989

NATURE OF EXPOSURE: road side GENERAL SITE TOPOGRAPHY: flat

FACE HEIGHT/EXPOSURE SIZE: ND/4 m X 4 m PRESENT LAND USE: ND

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface ND | [ ] | [ ] |
| | Depth of Weathering <0.5 cm | [X] | [ ] |
| | Fresh Surface: | | |
| | Dry | [ ] | [ ] |
| | Wet | [ ] | [ ] |
| Outcrop Homogeneity | 1/2 pink<br>1/2 white | [ ] | [X] |
| Grain Size: | | [ ] | [ ] |
| | Coarse [X] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: High

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [X]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 145/90 Spacing 10-30 cm
Secondary: Strike/dip 63/90 Spacing 1.5 m
Sheeting: Strike/dip ND Spacing

ESTIMATED POTENTIAL BLOCK SIZE: small

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [X] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 37b-1 pink
Finished No [X] Yes [ ] 37b-2 white

Comments: One side of the outcrop is like 37b-1, the other side like 37b-2. There is a gradual change from one to the other. Photos 83 and 84.
Vein spacing is 5-10 cm in size. Alteration zones around small veins.
Iron staining on fractures also found.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 42-1 OVERALL POTENTIAL: Low

COMMODITY: Granite COLOUR: Orange-brown

NTS MAP SHEET: 21 O/1 COUNTY: Northumberland

LATITUDE: 47° 14' 50" LONGITUDE: 66° 28' 45"

UTM COORDINATES: 236721.3 mE, 5238292.0 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 7 km northwest of Big Bald Mountain; on the main South Nepisiguit - South Sevogle road

GEOLOGICAL UNIT/ROCK TYPE: Ogm/Meridian Brook

PREVIOUS WORK/REFERENCES: Whalen 1987, 1988

NATURE OF EXPOSURE: road cut GENERAL SITE TOPOGRAPHY: side of hill

FACE HEIGHT/EXPOSURE SIZE: ND/20 m X 3 m PRESENT LAND USE: Forested

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - brown | [ ] | [X] |
| | Depth of Weathering 0.5 cm | [X] | [ ] |
| | Fresh Surface: | | |
| | Dry grey-pink | [ ] | [X] |
| | Wet orange/brown | [ ] | [X] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [X] | [ ] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [ ] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |
| Cementing/Integrity: ND | | | |

BEDDING: No [X] Yes [ ] Strike/dip:

Bedding thickness: Average Range

FABRIC: No [ ] Yes [X] Strike/dip: 128° /46° N
Spacing: pervasive Severity: medium
foliation

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [X]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 040/75W Spacing 10-20 cm
Secondary: Strike/dip 143/90 Spacing 15 cm
Sheeting: Strike/dip 175/25W Spacing 0.5 m

ESTIMATED POTENTIAL BLOCK SIZE: ND

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [ ] Yes [X]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [X] | [ ] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 42-1
Finished No [X] Yes [ ]

Comments: Intensely jointed. Fabric (schistosity) does not parallel jointing and does not affect the integrity of the rock.
This is the best outcrop in the area of Whalen's sample number 98 and 97.
The rock splits extremely easily, almost slatey.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 42-2c

OVERALL POTENTIAL: Low

COMMODITY: Granite

COLOUR: Grey

NTS MAP SHEET: 21 O/7

COUNTY: Northumberland

LATITUDE: 47° 16' 13"

LONGITUDE: 66° 41' 05"

UTM COORDINATES: 221289.1 mE, 5241568.7 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 19 km southwest of Popple Depot on Meridian Brook; Highway 430, Consolidated Bathurst haul road and logging roads southwest from Popple Depot.

GEOLOGICAL UNIT/ROCK TYPE: Ogm

PREVIOUS WORK/REFERENCES: Whalen 1987, 1988

NATURE OF EXPOSURE: boulders probable outcrop

GENERAL SITE TOPOGRAPHY: side of hill

FACE HEIGHT/EXPOSURE SIZE: 15 m X 5 m

PRESENT LAND USE: Forested

DESCRIPTION:

| | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - white | [ ] | [X] |
| | Depth of Weathering <1 cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - grey | [X] | [ ] |
| | Wet - grey | [X] | [ ] |
| Outcrop Homogeneity | | [ ] | [ ] |
| Grain Size: | | [ ] | [ ] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [ ] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [X] foliated | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: ND

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [ ] Yes [X] Strike/dip:
Spacing: foliated Severity: moderate

JOINTING
Pattern: Regular [ ] Irregular [ ]

Spacing: Intense (<0.5m) [X]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip ND Spacing ND
Secondary: Strike/dip ND Spacing ND
Sheeting: Strike/dip ND Spacing ND

ESTIMATED POTENTIAL BLOCK SIZE: ND

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [X] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 42-2c
Finished No [X] Yes [ ]

Comments: Three samples along the stretch of road were taken. There is a lot of variation. If they are all outcrop, then colour changes from orange to white towards contact, and foliation also increases.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 43-1 OVERALL POTENTIAL: Moderate

COMMODITY: Granite COLOUR: Grey

NTS MAP SHEET: 21 O/02 COUNTY: Northumberland

LATITUDE: 47° 13' 25" LONGITUDE: 66° 37' 00"

UTM COORDINATES: 226195.6 mE, 5236142.2 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 0.8 km south of West Branch South Branch Nepisiguit River, 26 km south-southwest of Popple Depot.

GEOLOGICAL UNIT/ROCK TYPE: Ogs/Sweat Hill Granite

PREVIOUS WORK/REFERENCES: ND

NATURE OF EXPOSURE: road side GENERAL SITE TOPOGRAPHY: low

FACE HEIGHT/EXPOSURE SIZE: 1.5 m/ 3 X 5 m PRESENT LAND USE: road access

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface | [X] | [ ] |
| | Depth of Weathering 0.5 cm | [ ] | [ ] |
| | Fresh Surface: | | |
| | Dry - white grey | [ ] | [X] |
| | Wet - pink grey | [ ] | [X] |
| Outcrop Homogeneity | | [ ] | [ ] |
| Grain Size: | | [X] | [ ] |
| | Coarse [X] | | |
| | Medium [ ] | | |
| | Fine [ ] | | |
| Texture | | [ ] | [X] |
| | Porphyritic [X] | | |
| | Equigranular [ ] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: Good

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [ ] Yes [X] Strike/dip: 110/80N
Spacing: ND Severity: weak

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [X]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 050/85N Spacing 1.4 m
Secondary: Strike/dip 150/90 Spacing 2-3 m
Sheeting: Strike/dip ND Spacing 1 m+

ESTIMATED POTENTIAL BLOCK SIZE(m): 2 X 1 X 1

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [ ] | [X] | [ ] | [ ] | |
| Veining | [ ] | [X] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: Hornblende Percentage: 0.5%
Tourmaline

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 43-1
Finished No [ ] Yes [X]

Comments: Numerous large angular boulders in the area.
Photo 37 and 38
Minor Fe staining locally.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 43-2 OVERALL POTENTIAL: Low

COMMODITY: Foliated Granite COLOUR: Black

NTS MAP SHEET: 21 O/2 COUNTY: Northumberland

LATITUDE: 47° 12' 30" LONGITUDE: 66° 39' 30"

UTM COORDINATES:222961.8 mE, 5234591.8 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 1.8 km north of North Pole Mountain, 29.8 km south southwest of Popple Depot, 4.4 km south of the West Branch South Branch Nepisiguit River.

GEOLOGICAL UNIT/ROCK TYPE: Ogs/Sweat Hill Granite

PREVIOUS WORK/REFERENCES: ND

NATURE OF EXPOSURE: road side GENERAL SITE TOPOGRAPHY: low

FACE HEIGHT/EXPOSURE SIZE: ND/20 X 30 m PRESENT LAND USE: road access

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - dark grey | [X] | [ ] |
| | Depth of Weathering cm | [ ] | [ ] |
| | Fresh Surface: | | |
| | Dry - dark grey | [ ] | [X] |
| | Wet - grey black | [ ] | [X] |
| Outcrop Homogeneity | | [ ] | [X] |
| Grain Size: | | [ ] | [X] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [ ] | [X] |
| | Porphyritic [X] | | |
| | Equigranular [ ] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: moderate

BEDDING: No [X] Yes [ ] Strike/dip:

Bedding thickness: Average Range

FABRIC: No [ ] Yes [X] Strike/dip: 115/80N
Spacing: 0.1 - 1 cm Severity: moderate - strong

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip ND Spacing 1.5 m
Secondary: Strike/dip ND Spacing 1.5 m
Sheeting: Strike/dip ND Spacing ND

ESTIMATED POTENTIAL BLOCK SIZE: ND

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [ ] | [X] | [ ] | [ ] | 3 X 8 cm/ND |
| Veining | [ ] | [ ] | [X] | [ ] | 1-4 cm/ND |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: sulphides Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 43-2
Finished No [ ] Yes [X]

Comments: Limited to poor exposure.
- Fe staining on scattered surfaces and in blotches
Sample 43-2
- tends to split along foliation
Photos 39 and 40
- some boudinage quartz and/or pegmatite

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 44-1 OVERALL POTENTIAL: Low

COMMODITY: Foliated Granite COLOUR: Orange

NTS MAP SHEET: 21 O/01 COUNTY: Northumberland

LATITUDE: 47° 14' 50" LONGITUDE: 66° 09' 00"

UTM COORDINATES: 261628.2 mE, 5237232.8 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 1 km west of South Little River Lake, hwy 430, 10.3 km west of Otter Brook Road and 5.1 km south of the South Little River Lake road, 1.3 km southwest on logging road.

GEOLOGICAL UNIT/ROCK TYPE: Ogh/Heath Steele Granodiorite

PREVIOUS WORK/REFERENCES: ND

NATURE OF EXPOSURE: road side GENERAL SITE TOPOGRAPHY: moderate

FACE HEIGHT/EXPOSURE SIZE: 1 m/2 X 8 m PRESENT LAND USE: clear cut

DESCRIPTION:

| | Uniform | Variable |
|---|---|---|
| Colour: Weathered Surface - white | [ ] | [X] |
| Depth of Weathering 1 cm | [ ] | [X] |
| Fresh Surface: | | |
| Dry - brown orange | [ ] | [X] |
| Wet - orange | [ ] | [X] |
| Outcrop Homogeneity | [X] | [ ] |
| Grain Size: | [X] | [ ] |
| Coarse [ ] | | |
| Medium [X] | | |
| Fine [ ] | | |
| Texture | [X] | [ ] |
| Porphyritic [ ] | | |
| Equigranular [X] | | |
| Inequigranular [ ] | | |

Cementing/Integrity: Good

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip: 100/65° S
Spacing: 0.5 cm Severity: strong

JOINTING
Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 100/80N Spacing 1 m
Secondary: Strike/dip 065/80S Spacing 0.5-1 m
Sheeting: Strike/dip ND Spacing ND

ESTIMATED POTENTIAL BLOCK SIZE(m): 1 X 1 X 0.5

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [ ] | [ ] | [X] | 0.5-2 cm/0.5 m |
| Cavities | [ ] | [ ] | [X] | [ ] | 0.3 X 3 cm |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 44-1
Finished No [ ] Yes [X]

Comments: This unit has abundant bull quartz veins and/or lenses throughout. Many veins have not been filled leaving cavities.
- some areas are highly fractured
- locally has Fe staining
- Photo 41 and 42

**SITE DATA RECORD - STONE INVENTORY**

SITE NUMBER: 46-1 OVERALL POTENTIAL: Low

COMMODITY: Granite COLOUR: White

NTS MAP SHEET: 21 O/1 COUNTY: Northumberland

LATITUDE: 47° 07' 05" LONGITUDE: 66° 26' 40"

UTM COORDINATES: 238714.9 mE, 5223823.1 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 9 km south-southwest of Big Bald Mountain; 4.5 km along a secondary logging road west of the South Nepisiguit - South Sevogle River road.

GEOLOGICAL UNIT/ROCK TYPE: Ogu/Mullin Stream Lake Granite

PREVIOUS WORK/REFERENCES: Whalen 1988, 1987

NATURE OF EXPOSURE: boulders GENERAL SITE TOPOGRAPHY: small hill

FACE HEIGHT/EXPOSURE SIZE: ND PRESENT LAND USE: clear cut

DESCRIPTION:

| | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - white | [ ] | [X] |
| | Depth of Weathering 1-2 cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - grey | [ ] | [X] |
| | Wet - grey | [ ] | [X] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [ ] | [X] |
| | Coarse [X] | | |
| | Medium [X] | | |
| | Fine [X] | | |
| Texture | | [ ] | [X] |
| | Porphyritic [ ] | | |
| | Equigranular [ ] | | |
| | Inequigranular [X] subporphyritic | | |
| Cementing/Integrity: ND | | | |

BEDDING: No [X] Yes [ ] Strike/dip:

Bedding thickness: Average Range

FABRIC: No [ ] Yes [X] Strike/dip:
Spacing: ND Severity: severe

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [X]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip Spacing
Secondary: Strike/dip Spacing
Sheeting: Strike/dip Spacing

ESTIMATED POTENTIAL BLOCK SIZE(m): <1 $m^3$

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [ ] | [X] | [ ] | < 5 cm/2 m |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 46-1
Finished No [X] Yes [ ]

Comments: The area was searched but good outcrop could not be found. A hill in the location of presumed outcrop was covered with boulders, all of the same type, white, foliated granite.
Blocks ~ 1 $m^3$ some smaller.
Most blocks appeared to break along the joints, which were usually <0.5 m apart.
Photo 43

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 46-2 OVERALL POTENTIAL: Low

COMMODITY: Granite COLOUR: Orange

NTS MAP SHEET: 21 O/1 COUNTY: Northumberland

LATITUDE: 47° 01' 00" LONGITUDE: 66° 18' 33"

UTM COORDINATES: 248498.9 mE, 5212113.7 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: Several hundered metres north of Mullin Stream Lake; bush road, 1 km west of a secondary logging road that passes by the east side of Mullin Stream Lake.

GEOLOGICAL UNIT/ROCK TYPE: Ogu/Mullin Stream Lake Granite

PREVIOUS WORK/REFERENCES: Whalen 1988, 1987

NATURE OF EXPOSURE: boulders GENERAL SITE TOPOGRAPHY: flat

FACE HEIGHT/EXPOSURE SIZE: boulders PRESENT LAND USE: Forested

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface ND | [X] | [ ] |
| | Depth of Weathering 0.1 cm | [X] | [ ] |
| | Fresh Surface: | | |
| | Dry - orange | [ ] | [X] |
| | Wet - orange | [ ] | [X] |
| Outcrop Homogeneity | | [ ] | [X] |
| Grain Size: | | [X] | [ ] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: ND

BEDDING: No [X] Yes [ ] Strike/dip:

Bedding thickness: Average Range

FABRIC: No [ ] Yes [X] Strike/dip:
Spacing: ND Severity:

JOINTING ND
Pattern: Regular [ ] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip ND Spacing ND
Secondary: Strike/dip ND Spacing ND
Sheeting: Strike/dip ND Spacing ND

ESTIMATED POTENTIAL BLOCK SIZE(m): 1 $m^3$

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [ ] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [ ] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [ ] | [ ] | [ ] | |
| Cavities | [ ] | [ ] | [ ] | [ ] | |
| Schlieren | [ ] | [ ] | [ ] | [ ] | ND |
| Partings | [ ] | [ ] | [ ] | [ ] | |
| Fossils | [ ] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 46-2
Finished No [X] Yes [ ]

Comments: Orange-pink granite.
Outcrop mapped at this location but only boulders could be located. An outcrop located 100 m to the east is the same material but has pervasive quartz veins, fracturing and colour variations (pink to white to grey in one outcrop).

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 47-1 OVERALL POTENTIAL: Low

COMMODITY: Granite COLOUR: Grey

NTS MAP SHEET: 21 O/1 COUNTY: Northumberland

LATITUDE: 47° 04' 13" LONGITUDE: 66° 17' 30"

UTM COORDINATES: 250079.6 mE,5218014.5 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 6.5 km north of Mullin Stream Lake; on the main South Nepisiguit - South Sevogle River road.

GEOLOGICAL UNIT/ROCK TYPE: Og/(undivided) deformed Ordovician granite

PREVIOUS WORK/REFERENCES: Whalen 1988, 1987

NATURE OF EXPOSURE: outcrop GENERAL SITE TOPOGRAPHY: side of a gentle hill (15° slope)

FACE HEIGHT/EXPOSURE SIZE: ND/3 m X 1.5 m PRESENT LAND USE: Forested

DESCRIPTION:

| | Uniform | Variable |
|---|---|---|
| Colour: Weathered Surface - pink-orange | [ ] | [X] |
| Depth of Weathering 0.5 cm | [ ] | [X] |
| Fresh Surface: | | |
| Dry - light grey | [X] | [ ] |
| Wet - dark grey | [X] | [ ] |
| Outcrop Homogeneity | [ ] | [X] |
| Grain Size: | [X] | [ ] |
| Coarse [ ] | | |
| Medium [X] | | |
| Fine [ ] | | |
| Texture | [ ] | [X] |
| Porphyritic [ ] | | |
| Equigranular [X] | | |
| Inequigranular [ ] | | |

Cementing/Integrity: ND

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [ ] Yes [X] Strike/dip:
Spacing: ND Severity:

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip ND Spacing
Secondary: Strike/dip 155/90 Spacing
Sheeting: Strike/dip ND Spacing
Secondary joints clustered in groups over 15 cm but groups are 0.75 m apart.

ESTIMATED POTENTIAL BLOCK SIZE: ND

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [ ] | [X] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: sulphides Percentage: variable - less than 5% weathers excessively close to surface

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 47-1
Finished No [X] Yes [ ]

Comments: Poor outcrop and too small to really assess, however it seems that the rock is too variable in texture, fabric, veins (which are not consistent in size and direction) and sulphides.
Quartz veins are size is 2 cm in width, with a spacing >1.5 m.
Photo 44 and 45

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 47-2 OVERALL POTENTIAL: Low

COMMODITY: Granite COLOUR: Orange

NTS MAP SHEET: 21 O/1 COUNTY: Northumberland

LATITUDE: 47° 04' 12" LONGITUDE: 66° 18' 10"

UTM COORDINATES: 249234.7 mE, 5218019.2 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 6 km north of Mullin Stream Lake; along a bush road, 0.4 km north of Barracks Brook on the South Nepisiguit - South Sevogle River road.

GEOLOGICAL UNIT/ROCK TYPE: Og/(undivided) deformed Ordovician Granite

PREVIOUS WORK/REFERENCES: Whalen 1988, 1987

NATURE OF EXPOSURE: outcrop on a dirt road GENERAL SITE TOPOGRAPHY: flat

FACE HEIGHT/EXPOSURE SIZE: ND/10 m X 2 m PRESENT LAND USE: clear cut

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - white-rusty | [ ] | [X] |
| | Depth of Weathering 0.5 cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry -light grey-orange | [ ] | [X] |
| | Wet - orange | [ ] | [X] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [X] | [ ] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [ ] | [X] |
| | Porphyritic [ ] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: ND

BEDDING: No [ ] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [ ] Yes [X] Strike/dip: 080/20°S approximately
Spacing: pervasive Severity: medium

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 132/80N Spacing 0.5 m
Secondary: Strike/dip 060/80N Spacing 0.5 m
Sheeting: Strike/dip ND Spacing

ESTIMATED POTENTIAL BLOCK SIZE(a): <0.5m³

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [ ] | [X] | [ ] | [ ] | 0.5 m/ND |
| Veining | [ ] | [ ] | [X] | [ ] | 1.5 m/2 m |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: Sulphides Percentage: 5%

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 47-2
Finished No [X] Yes [ ]

Comments: Foliated sheared granite.
Parts of the outcrop are extremely iron stained
Photos 46 to 48.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 48-1 OVERALL POTENTIAL: Moderate

COMMODITY: Foliated Granite COLOUR: Grey

NTS MAP SHEET: 21 Ø/2 COUNTY: Northumberland

LATITUDE: 47° ØØ' Ø5" LONGITUDE: 66° 45' 1Ø"

UTM COORDINATES: 214ØØ5.6 mE, 5211938.Ø mN, Zone 2Ø

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 5 km west of Moccasin Lake; 52.7 km west on the Repap-Miramichi haul road from Hwy 1Ø8, 1.5 km west on side road, 5.Ø km northwest on branch road and 1.5 km southeast on spur road.

GEOLOGICAL UNIT/ROCK TYPE: Ogf/Fox Ridge Granite

PREVIOUS WORK/REFERENCES: Whalen 1988, 1987; Crouse 1976

NATURE OF EXPOSURE: bulldozed clearing GENERAL SITE TOPOGRAPHY: moderate ridge

FACE HEIGHT/EXPOSURE SIZE: Ø.5/1Ø X 25 m PRESENT LAND USE: clear cut

DESCRIPTION:

| | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - grey | [X] | [ ] |
| | Depth of Weathering cm | [X] | [ ] |
| | Fresh Surface: | | |
| | Dry - pink grey | [ ] | [X] |
| | Wet - pink grey | [ ] | [X] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [X] | [ ] |
| | Coarse [X] | | |
| | Medium [ ] | | |
| | Fine [ ] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [X] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: Good

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [ ] Yes [X] Strike/dip: 095/40° N
Spacing: .5 cm Severity: moderate to strong

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [X]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 140/75E Spacing 4 m
Secondary: Strike/dip 020/90 Spacing 5 m
Sheeting: Strike/dip ND Spacing 1.5 m

ESTIMATED POTENTIAL BLOCK SIZE(m): 4 X 5 X 1.5

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [ ] | [ ] | [X] | [ ] | |
| Veining | [ ] | [X] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 48-1
Finished No [ ] Yes [X]

Comments: This section of the unit has good block size. It is foliated with large (2-3 cm) round megacrysts of feldspar.
There are potential problems due to areas of abundant large xenoliths, random veining, and jointing not parallel to the foliation.
The area has dykes or lenses of grey medium-grained to fine-grained granite, also pink medium- and fine-grained granites.
Photo 49 and 50.

Xenoliths size is Ø.5 m with dense spacing.
Veining is Ø.5 cm in size with scattered spacing to 1 m.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 48-2 OVERALL POTENTIAL: Low

COMMODITY: Foliated Granite COLOUR: Grey

NTS MAP SHEET: 21 O/2 COUNTY: Northumberland

LATITUDE: 47° 00' 25" LONGITUDE: 66° 45' 30"

UTM COORDINATES: 214312.9 mE, 5212575.5 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 5 km west of Moccasin Lake; 52.7 km west on Repap-Miramichi haul road from Hwy 108 at McGraw Brook, 1.5 km west on side road and 4.5 km northwest and west on branch road.

GEOLOGICAL UNIT/ROCK TYPE: Ogf/Fox Ridge Granite

PREVIOUS WORK/REFERENCES: Whalen 1988, 1987; Crouse, 1979

NATURE OF EXPOSURE: road side GENERAL SITE TOPOGRAPHY: ridge

FACE HEIGHT/EXPOSURE SIZE: 2 m/5 X 10 m PRESENT LAND USE: road access

DESCRIPTION:

| | Uniform | Variable |
|---|---|---|
| Colour: Weathered Surface - pink grey | [ ] | [X] |
| Depth of Weathering 1 cm | [ ] | [X] |
| Fresh Surface: | | |
| Dry - pink & black | [X] | [ ] |
| Wet - pink & blue | [X] | [ ] |
| Outcrop Homogeneity | [X] | [ ] |
| Grain Size: | [ ] | [X] |
| Coarse [ ] | | |
| Medium [X] | | |
| Fine [ ] | | |
| Texture | [X] | [ ] |
| Porphyritic [X] | | |
| Equigranular [X] | | |
| Inequigranular [ ] | | |

Cementing/Integrity: ND

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [ ] Yes [X] Strike/dip: 080/45° S
Spacing: 0.5 cm Severity: strong

JOINTING
Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [X]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 035/90 Spacing 0.5-1 m
Secondary: Strike/dip 120/80S Spacing 0.5
Sheeting: Strike/dip ND Spacing

ESTIMATED POTENTIAL BLOCK SIZE(m): 0.5 X 0.5 X 0.5

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [ ] | [X] | [ ] | [ ] | 4 cm/scattered |
| Veining | [ ] | [X] | [ ] | [ ] | 1 cm/scattered |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 48-2
Finished No [ ] Yes [X]

Comments: The outcrop is heavily jointed and/or fractured and has low potential for commercial use.
Near contact with grey granite, dip is 50° south.
Outcrop has a black biotite matrix with elongated megacrysts of pink feldspar.
Site of Whalen sample 319
Photo 51.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 48-3 OVERALL POTENTIAL: Low

COMMODITY: Foliated Granite COLOUR: Black

NTS MAP SHEET: 21 J/15 COUNTY: Victoria

LATITUDE: 46° 56' 50" LONGITUDE: 66° 51' 17"

UTM COORDINATES: 206659.9 mE, 5206296.4 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [ ] FREEHOLD [X]

LOCATION AND ACCESS: 2 km southwest of Island Lake on Fraser Road.

GEOLOGICAL UNIT/ROCK TYPE: Ogf/Fox Ridge

PREVIOUS WORK/REFERENCES: Crouse 1976

NATURE OF EXPOSURE: road cut GENERAL SITE TOPOGRAPHY: low-moderate

FACE HEIGHT/EXPOSURE SIZE: 2 m/25 m PRESENT LAND USE: road access

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - pink grey | [ ] | [X] |
| | Depth of Weathering 2 cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - pink & black | [ ] | [X] |
| | Wet - black | [ ] | [X] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [X] | [ ] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [X] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |
| Cementing/Integrity: ND | | | |

BEDDING: No [X] Yes [ ] Strike/dip:

Bedding thickness: Average Range

FABRIC: No [ ] Yes [X] Strike/dip: 170/90
Spacing: 0.5 cm Severity: strong - moderate

JOINTING
Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [X]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 160/90 Spacing 0-0.7 m
Secondary: Strike/dip 095/90 Spacing 0-0.5 m
Sheeting: Strike/dip ND Spacing

ESTIMATED POTENTIAL BLOCK SIZE: Nil

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [ ] Yes [X]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [X] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 48-3
Finished No [X] Yes [ ]

Comments: Outcrop is highly fractured with slickensides on the primary joints.
Very low potential.
Photo 52.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 49-1 OVERALL POTENTIAL: Low

COMMODITY: Granite COLOUR: Green grey

NTS MAP SHEET: 21 J/16 - 201 COUNTY: Northumberland

LATITUDE: 46° 48' 05" LONGITUDE: 66° 27' 42"

UTM COORDINATES: 235853.0 mE, 5588695.5 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [ ]

LOCATION AND ACCESS: 1.5 km south of Second Fowler Lake Highway 108, 1.5 km east of South Branch Renous River, 1 km north on road R8 and 250 m northeast on side road.

GEOLOGICAL UNIT/ROCK TYPE: Ogr (Of) Granite

PREVIOUS WORK/REFERENCES: Irrinki 1980

NATURE OF EXPOSURE: clearing GENERAL SITE TOPOGRAPHY: moderate

FACE HEIGHT/EXPOSURE SIZE: 1 m/3 X 5 m PRESENT LAND USE: clear cut

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - grey | [X] | [ ] |
| | Depth of Weathering 1.5 cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - grey | [ ] | [X] |
| | Wet - green grey | [ ] | [X] |
| Outcrop Homogeneity | | [ ] | [X] |
| Grain Size: | | [ ] | [X] |
| | Coarse [ ] | | |
| | Medium [ ] | | |
| | Fine [X] | | |
| Texture | | [ ] | [X] |
| | Porphyritic [X] | | |
| | Equigranular [ ] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: ND

BEDDING: No [X] Yes [ ] Strike/dip:

Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING
Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 055/75N Spacing <0.5
Secondary: Strike/dip 005/65W Spacing <0.5
Sheeting: Strike/dip ND Spacing

ESTIMATED POTENTIAL BLOCK SIZE: ND

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [X] | [ ] | [ ] | irregular |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 49-1
Finished No [X] Yes [ ]

Comments: Outcrop has massive areas and highly fractured areas, the fractured areas dominate.
- some yellowish staining locally
- outcrop 30 m west has 1 m primary joints but yhere is evidence of potential fracturing
- Photo 53.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 49-2 OVERALL POTENTIAL: Moderate

COMMODITY: Foliated Granite COLOUR: Grey

NTS MAP SHEET: 21 J/15 COUNTY: Northumberland

LATITUDE: 46° 50' 45" LONGITUDE: 66° 34' 55"

UTM COORDINATES: 226901.2 mE, 5194045.5 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [ ] FREEHOLD [X]

LOCATION AND ACCESS: 0.5 km east of Louis Lake, 16 km east of South Branch Renous River, 4-5 km north on logging road, 4.4 km east on Burke Lake road.

GEOLOGICAL UNIT/ROCK TYPE: Ogr (Of)/Foliated Granite

PREVIOUS WORK/REFERENCES: Irrinki 1980

NATURE OF EXPOSURE: bush road GENERAL SITE TOPOGRAPHY: low

FACE HEIGHT/EXPOSURE SIZE: 1 m/10 X 30 PRESENT LAND USE: road

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - green black | [ ] | [X] |
| | Depth of Weathering .5 cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - dark green | [ ] | [X] |
| | Wet - green black | [ ] | [X] |
| Outcrop Homogeneity | | [ ] | [X] |
| Grain Size: | | [ ] | [X] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [ ] | [X] |
| | Porphyritic [X] | | |
| | Equigranular [ ] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: ND

BEDDING: No [X] Yes [ ] Strike/dip:

Bedding thickness: Average Range

FABRIC: No [ ] Yes [X] Strike/dip: 170/80W
Spacing: 1 cm Severity: moderate-strong

JOINTING
Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 170/80W Spacing 0.5-1.5 m
Secondary: Strike/dip 120/70S Spacing 1-2 m
Sheeting: Strike/dip ND Spacing ND

ESTIMATED POTENTIAL BLOCK SIZE(m): 1 X 2

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [ ] | [X] | [ ] | [ ] | 3 m+ |
| Veining | [ ] | [X] | [ ] | [ ] | varies |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 49-2
Finished No [ ] Yes [X]

Comments: Several discontinuous joint sets which may reduce the block size.
Local alteration along primary joints.
Photos 54 and 55
100-150 m further east block size increases with fewer interference joints but foliation decreases. Colour more pinkish, more veining observed.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 49-3 OVERALL POTENTIAL: Moderate

COMMODITY: Granite COLOUR: Pink

NTS MAP SHEET: 21 J/15 COUNTY: Northumberland

LATITUDE: 46° 50' 49" LONGITUDE: 66° 34' 12"

UTM COORDINATES: 227817.4 mE, 5194127.4 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [ ] FREEHOLD [X]

LOCATION AND ACCESS: 1.2 km east of Louis Lake; 16 km east of South Branch Renous River on Highway 108, 4.4 km north on logging road, 5.75 km east on Burke Lake road.

GEOLOGICAL UNIT/ROCK TYPE: Ogr (Of) Granite

PREVIOUS WORK/REFERENCES: ND

NATURE OF EXPOSURE: road side GENERAL SITE TOPOGRAPHY: low - moderate

FACE HEIGHT/EXPOSURE SIZE: 1 m/10 X 30 m PRESENT LAND USE: road access

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - greenish | [ ] | [X] |
| | Depth of Weathering 1 cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - pink green | [ ] | [X] |
| | Wet - pink green | [ ] | [X] |
| Outcrop Homogeneity | | [ ] | [X] |
| Grain Size: | | [X] | [ ] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [ ] | [X] |
| | Porphyritic [X] | | |
| | Equigranular [ ] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: ND

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [X]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 065/65S Spacing 1-2 m
Secondary: Strike/dip 120/90 Spacing 1-2 m
Sheeting: Strike/dip ND Spacing ND

ESTIMATED POTENTIAL BLOCK SIZE(m): 2 X 2

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) cm/varies | [ ] | [X] | [ ] | [ ] | 4 - 10 |
| Veining | [ ] | [X] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: biotite Percentage: 5-10%

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 49-3
Finished No [ ] Yes [X]

Comments: Phenocrysts vary 0.5-2.5 cm., some larger phenocrysts are zoned.
- some bluish quartz (or cordierite)
- Photo 56
- outcrop discontinuous over additional 500 m size and degree of phenocrysts reduces minor colour variations
-additional outcrops over area for 2 km to east with potential of good block size if colour is desirable.
Photo 59
Veins are 1-2 cm wide with scattered spacings.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 49-4 OVERALL POTENTIAL: Moderate

COMMODITY: Granite COLOUR: Pink

NTS MAP SHEET: 21 J/15 COUNTY: Northumberland

LATITUDE: 46° 50' 45" LONGITUDE: 66° 33' 20"

UTM COORDINATES: 228913.0 mE, 5193953.9 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [ ] FREEHOLD [X]

LOCATION AND ACCESS: 0.5 km west of Burke Lake, 16 km east of South Branch Renous River, 4.4. km north on logging road, 6.3 km east on Burke Lake road, 1.2 km southeast on side road on east side of a small lake.

GEOLOGICAL UNIT/ROCK TYPE: Ogr (Of) Granite

PREVIOUS WORK/REFERENCES: ND

NATURE OF EXPOSURE: side hill GENERAL SITE TOPOGRAPHY: moderate

FACE HEIGHT/EXPOSURE SIZE: 4/15 X 50 m PRESENT LAND USE: clear cut

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - grey | [X] | [ ] |
| | Depth of Weathering 0.5 cm | [X] | [ ] |
| | Fresh Surface: | | |
| | Dry - green black | [X] | [ ] |
| | Wet - pink green | [X] | [ ] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [X] | [ ] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [X] | | |
| | Equigranular [ ] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: ND

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING
Pattern: Regular [X] Irregular [ ]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [X]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 090/80S Spacing 1-3 m
Secondary: Strike/dip 015/80W Spacing 1.5
Sheeting: Strike/dip ND Spacing ND

ESTIMATED POTENTIAL BLOCK SIZE(m): 1.5 X 2 X ND

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [ ] | [ ] | [X] | [ ] | 3 cm/0.5 m |
| Veining | [ ] | [X] | [ ] | [ ] | 0.5 cm/rare |
| Cavities | [ ] | [X] | [ ] | [ ] | rare |
| Schlieren | [ ] | [X] | [ ] | [ ] | rare |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 49-4
Finished No [ ] Yes [X]

Comments: A fair amount of small xenoliths throughout.
Photo 57 and 58.

# SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 50-1 OVERALL POTENTIAL: Low

COMMODITY: Granite COLOUR: Black

NTS MAP SHEET: 21 J/15 COUNTY: York

LATITUDE: 46° 51' 00" LONGITUDE: 66° 42' 45"

UTM COORDINATES: 216970.0 mE, 5194971.2 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [ ] FREEHOLD [X]

LOCATION AND ACCESS: 7 km west of the Half Way Inn on the Plaster Rock - Renous road.

GEOLOGICAL UNIT/ROCK TYPE: COp/Moose Lake Tonalite

PREVIOUS WORK/REFERENCES: Irrinki 1978

NATURE OF EXPOSURE: road cut GENERAL SITE TOPOGRAPHY: flat

FACE HEIGHT/EXPOSURE SIZE: ND/40 m X 3 m PRESENT LAND USE: Forested

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface ND | [ ] | [X] |
| | Depth of Weathering <0.1 cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - dark grey | [ ] | [X] |
| | Wet - black | [ ] | [X] |
| Outcrop Homogeneity | | [ ] | [X] |
| Grain Size: | | [ ] | [X] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [ ] | [X] |
| | Porphyritic [ ] | | |
| | Equigranular [ ] | | gneissic |
| | Inequigranular [X] | | |

Cementing/Integrity: ND

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [ ] Yes [X] Strike/dip:

Spacing: Gneissosity  Severity:  Extremely variable

JOINTING

Pattern:  Regular [ ]  Irregular [X]

Spacing:  Intense (<0.5m) [X]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 112/90 Spacing 0.5-1 m
Secondary: Strike/dip 000/90 Spacing variable
Sheeting: Strike/dip 000/00 Spacing <0.5 m

ESTIMATED POTENTIAL BLOCK SIZE(m): <1 $m^3$

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [ ] Yes [X]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [X] | [ ] | [ ] | ND |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: Pyrite  Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 50-1
Finished No [X] Yes [ ]

Comments: Quartz-biotite gneiss, fine to medium grained.
Very variable in terms of spacing of quartz bands, and the deformation of the gneissic layers.
Some primary and secondary joints are slickensided.
Photo 60.

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 53-1 OVERALL POTENTIAL: Low

COMMODITY: Granite COLOUR: Dark Grey

NTS MAP SHEET: 21 H/11 COUNTY: Kings

LATITUDE: 45° 43' 05" LONGITUDE: 65° 14' 25"

UTM COORDINATES: 325647.1 mE, 5064945.4 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [ ] FREEHOLD [X]

LOCATION AND ACCESS: Southwest of Mechanic Settlement, Highway 114 and logging road to the southwest from Mechanic Settlement.

GEOLOGICAL UNIT/ROCK TYPE: HCgbMs/Mechanic Gabbro

PREVIOUS WORK/REFERENCES: Paktunc 1989; Barr and White 1988a and 1988b

NATURE OF EXPOSURE: outcrop GENERAL SITE TOPOGRAPHY: low and rolling gentle hills

FACE HEIGHT/EXPOSURE SIZE: ND/10 m X 10 m PRESENT LAND USE: Forested

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface ND | [ ] | [X] |
| | Depth of Weathering 0.1 cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - light grey | [X] | [ ] |
| | Wet - dark grey to black | [X] | [ ] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [ ] | [X] |
| | Coarse [ ] | | |
| | Medium [X] | | |
| | Fine [ ] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: Good

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING
Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [X]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 112/70N Spacing <0.5 m
Secondary: Strike/dip 175/90 Spacing <0.5 m
Sheeting: Strike/dip ND Spacing

ESTIMATED POTENTIAL BLOCK SIZE(m): < 1 $m^3$

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [X] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 53-1
Finished No [ ] Yes [X]

Comments: An outcrop 20 m away from sample site is very coarse grained, so in a sense the homogeneity over a large area is quite variable.
This outcrop is the best of all seen in the area. Others are variable in grain size and colour, are more fractured and have more sulphides and veins.
Photo 61 - Site 53-1
Photo 62 - columnar jointing east of Site 53-1

## SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 54a-1 OVERALL POTENTIAL: Moderate

COMMODITY: Granite COLOUR: Red

NTS MAP SHEET: 21 H/11 COUNTY: Saint John, Kings

LATITUDE: 45° 30' 45" LONGITUDE: 65° 24' 12"

UTM COORDINATES: 312272.1 mE, 5042477.3 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [X] FREEHOLD [X]

LOCATION AND ACCESS: 2.5 km west of Bonnell Brook, 1.5 km north of Mary Pitcher Lake, network of logging roads.

GEOLOGICAL UNIT/ROCK TYPE: HCsgBB/Bonnell Brook Syenogranite

PREVIOUS WORK/REFERENCES: Barr 1987; Barr and White 1988a and 1988b

NATURE OF EXPOSURE: road side GENERAL SITE TOPOGRAPHY: moderate

FACE HEIGHT/EXPOSURE SIZE: 5 m/50 X 10 m PRESENT LAND USE: clear cut

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: Weathered Surface - white-orange | | [X] | [ ] |
| Depth of Weathering 1 cm | | [X] | [ ] |
| Fresh Surface: | | | |
| | Dry - orange | [X] | [ ] |
| | Wet - orange/red | [X] | [ ] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [X] | [ ] |
| | Coarse [ ] | | |
| | Medium [ ] | | |
| | Fine [X] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: Good

BEDDING: No [X] Yes [ ] Strike/dip:
Bedding thickness: Average Range

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING
Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 140/90 Spacing 1.0-1.5 m
Secondary: Strike/dip 040/80N Spacing 1 m
Third: Strike/dip 090/85S Spacing 0.5-1 m
Sheeting: Strike/dip ND Spacing ND

ESTIMATED POTENTIAL BLOCK SIZE: ND

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [X] | [ ] | [ ] | 4 mm/ND |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 54a-1
Finished No [ ] Yes [X]

Comments: An area with moderately spaced joints in a unit with intense fracturing.
Joint spacing varies from intense to moderate with an isolated area of wide joints.
This pluton for the most part has low potential, however, there are a few isolated islands of quality rock in a sea of intense fractures.
Photos 63 and 64.
Faint trace of Fe staining.

## SITE DATA RECORD - STONE INVENTORY

**SITE NUMBER:** 57-1 **OVERALL POTENTIAL:** Low

**COMMODITY:** Granite **COLOUR:** Greenish-Pink

**NTS MAP SHEET:** 21 H/10 **COUNTY:** Albert

**LATITUDE:** 45° 41' 12" **LONGITUDE:** 64° 57' 10"

**UTM COORDINATES:** 347936.8 mE, 5060871.8 mN, Zone 20

**PROPERTY OWNERSHIP:** CROWN [X] FREEHOLD [X]

**LOCATION AND ACCESS:** South of Teahan Corner, Highway 114 and Teahan Corner Road along Fundy Park boundary.

**GEOLOGICAL UNIT/ROCK TYPE:** HgdFF/Forty-five River Pluton

**PREVIOUS WORK/REFERENCES:** Barr and White 1988a and 1988b; Ruitenberg et al. 1979

**NATURE OF EXPOSURE:** river cut **GENERAL SITE TOPOGRAPHY:** high

**FACE HEIGHT/EXPOSURE SIZE:** 60 m high cliff **PRESENT LAND USE:** -

**DESCRIPTION:**

| | Uniform | Variable |
|---|---|---|
| Colour: Weathered Surface ND | [ ] | [X] |
| Depth of Weathering 0.1 cm | [ ] | [X] |
| Fresh Surface: | | |
| Dry | [ ] | [X] |
| Wet - greenish | [ ] | [X] |
| Outcrop Homogeneity | [ ] | [X] |
| Grain Size: | [ ] | [ ] |
| Coarse [ ] | | |
| Medium [X] | | |
| Fine [ ] | | |
| Texture | [ ] | [X] |
| Porphyritic [ ] | | |
| Equigranular [X] | | |
| Inequigranular [ ] | | |
| Cementing/Integrity: ND | | |

**BEDDING:** No [X] Yes [ ] Strike/dip:

Bedding thickness: Average Range

FABRIC: No [ ] Yes [X] Strike/dip: random
Spacing: Severity: weak

JOINTING
Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [X]
Moderate (0.5-1.5m) [ ]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip ND Spacing
Secondary: Strike/dip ND Spacing
Sheeting: Strike/dip ND Spacing

ESTIMATED POTENTIAL BLOCK SIZE(m): < $1m^3$

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [ ] | [ ] | [X] | [ ] | |
| Cavities | [ ] | [X] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [X] | [ ] | [ ] | [ ] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: Saussurite Percentage: 10%

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 57-1
Finished No [X] Yes [ ]

Comments: Pervasive green alteration.
Many fractures and joints.
Potential is very low.
Photos 66 to 68.

## SITE DATA RECORD - STONE INVENTORY

**SITE NUMBER:** 58-1 **OVERALL POTENTIAL:** Low

**COMMODITY:** Sandstone **COLOUR:** Red

**NTS MAP SHEET:** 21 H/15 **COUNTY:** Albert

**LATITUDE:** 45° 47' 15" **LONGITUDE:** 64° 41' 13"

**UTM COORDINATES:** 368873.4 mE, 5071603.7 mN, Zone 20

**PROPERTY OWNERSHIP:** CROWN [ ] FREEHOLD [X]

**LOCATION AND ACCESS:** 2.5 km north of Hwy. 114 at Hopewell Hill.

**GEOLOGICAL UNIT/ROCK TYPE:** Pennsylvanian Hopewell Group

**PREVIOUS WORK/REFERENCES:** Norman 1930

**NATURE OF EXPOSURE:** fill quarry **GENERAL SITE TOPOGRAPHY:** moderate

**FACE HEIGHT/EXPOSURE SIZE:** 10 m/30 X 20 m **PRESENT LAND USE:** abandoned quarry

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - red-grey | [X] | [ ] |
| | Depth of Weathering cm | [ ] | [X] |
| | Fresh Surface: | | |
| | Dry - grey red | [X] | [ ] |
| | Wet - red grey | [X] | [ ] |
| Outcrop Homogeneity | | [ ] | [X] |
| Grain Size: | | [ ] | [X] |
| | Coarse [ ] | | |
| | Medium [ ] | | |
| | Fine [X] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: Fair to poor

**BEDDING:** No [ ] Yes [X] Strike/dip: 080/15° N
Bedding thickness: Average 0.5 m Range 0.2-1.5 m

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING
Pattern: Regular [ ] Irregular [X]

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [X]
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip 060/75S Spacing
Secondary: Strike/dip 170/80W Spacing
Sheeting: Strike/dip ND Spacing

ESTIMATED POTENTIAL BLOCK SIZE(m): 1 X 1 X 0.5

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [ ] | [ ] | [X] | [ ] | 1 cm/varies |
| Veining | [X] | [ ] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [ ] | [ ] | [ ] | [X] | 1-4 cm |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 58-1
Finished No [ ] Yes [X]

Comments: Rock readily splits along bedding planes, shaley layers.
-sections have "bullet holes" due to clasts of poorly or uncemented sandstone.
- evidence of a layer or band of reduced sandstone with a carbonate cement.
- unlikely to have much potential unless beds are morE competent at depth.
- Photo 69 - Site 58-1.
- Photos 70 to 76 - various locations in southern zone.

# SITE DATA RECORD - STONE INVENTORY

SITE NUMBER: 59-1 OVERALL POTENTIAL: Low

COMMODITY: Sandstone COLOUR: Red

NTS MAP SHEET: 21 P/12 COUNTY: Gloucester

LATITUDE: 47° 32' 40" LONGITUDE: 65° 35' 32"

UTM COORDINATES: 304935.4 mE, 5268707.1 mN, Zone 20

PROPERTY OWNERSHIP: CROWN [ ] FREEHOLD [X]

LOCATION AND ACCESS: New highway 6.3 km south of Bathurst intersection.

GEOLOGICAL UNIT/ROCK TYPE: Psl - Red sandstone

PREVIOUS WORK/REFERENCES: ND

NATURE OF EXPOSURE: road side GENERAL SITE TOPOGRAPHY: flat

FACE HEIGHT/EXPOSURE SIZE: 1.75 m/ND PRESENT LAND USE: road access

| DESCRIPTION: | | Uniform | Variable |
|---|---|---|---|
| Colour: | Weathered Surface - red | [X] | [ ] |
| | Depth of Weathering 0.5 cm | [X] | [ ] |
| | Fresh Surface: | | |
| | Dry - red | [X] | [ ] |
| | Wet - brown-red | [X] | [ ] |
| Outcrop Homogeneity | | [X] | [ ] |
| Grain Size: | | [X] | [ ] |
| | Coarse [ ] | | |
| | Medium [ ] | | |
| | Fine [X] | | |
| Texture | | [X] | [ ] |
| | Porphyritic [ ] | | |
| | Equigranular [X] | | |
| | Inequigranular [ ] | | |

Cementing/Integrity: Poor

BEDDING: No [ ] Yes [X] Strike/dip: ND
Bedding thickness: Average 1 cm Range 1-5 cm

FABRIC: No [X] Yes [ ] Strike/dip:
Spacing: Severity:

JOINTING

Pattern: Regular [ ] Irregular [ ] ND

Spacing: Intense (<0.5m) [ ]
Moderate (0.5-1.5m) [ ] ND
Wide (>1.5m) [ ]

Orientation of Dominant Joint Set
Vertical - Primary: Strike/dip N/D Spacing
Secondary: Strike/dip N/D Spacing
Sheeting: Strike/dip N/D Spacing

ESTIMATED POTENTIAL BLOCK SIZE: ND

EVIDENCE OF PREVIOUS EXPLOSIVE USE AT SITE: No [X] Yes [ ]

| IMPERFECTIONS: | None | Sparse | Moderate | Intense | Size/Spacing |
|---|---|---|---|---|---|
| Xenoliths (Knots) | [X] | [ ] | [ ] | [ ] | |
| Veining | [X] | [ ] | [ ] | [ ] | |
| Cavities | [X] | [ ] | [ ] | [ ] | |
| Schlieren | [X] | [ ] | [ ] | [ ] | |
| Partings | [ ] | [ ] | [ ] | [X] | |
| Fossils | [X] | [ ] | [ ] | [ ] | |

Deleterious Minerals: Type: ND Percentage: ND

Potential Use: ND

Sample: Collected No [ ] Yes [X] Sample Number 59-1
Finished No [ ] Yes [X]

Comments: Sub-outcrop exposed using ripper on bulldozer.
- very little competent material.
- Photo 77 and 78 - Site 59-1.
- Photos 79 to 81 - various locations in the northern zone.

MAPS
NOT
FILMED

CARTES
OMISES